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Excavations in Whitehawk Neolithic Camp, Brighton, 1932-3¹

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[Read 2nd November 1933]

WHITEHAWK CAMP, situated on the Brighton Race-course, is one of the eight proved neolithic camps of 'causewayed' type in Britain.² It consists of four concentric oval rings of interrupted ditches, situated on a saddle between two slight eminences on the back of a north-south ridge on the eastern edge of the town of Brighton. The outermost ring (fourth ditch), which is deficient on the east where the hill falls very steeply into Whitehawk Bottom, encloses about 10 acres, while the inner ring encloses less than two. About half the circuit of the two inner rings, and considerable stretches of the two outer lines, have been levelled or otherwise damaged by the formation of the race-course and by allotment gardens. The general plan (pl. xii) is the result of a careful survey by the writer in 1928, when the vanished portions of the ditches were to a large extent recovered by percussion of the ground³—a method which was not, however, of any avail in the allotment gardens where there was no turf, and the 'boser' simply sank into soft soil which damped the vibrations.

¹ Report prepared on behalf of the Museums Sub-committee of the Brighton Corporation.

² The others are : Knap Hill (Wilts.), Windmill Hill (Wilts.), Robin Hood's Ball (Wilts.), Abingdon (Berks.), The Trundle (Sussex), Hembury (Devon), and Maiden Bower (Bucks.). A few others are suspected. See *Antiquity*, iv, 22-54.

³ See *Antiquity*, iv, 30-1, for a description of this process.

At its north-east corner the outer ditch turns off radially to cut off a triangular patch of level ground between the third ditch and the crest of the steep drop into Whitehawk Bottom; and at the south-west corner a branch of the fourth ditch runs tangentially down towards Baker's Bottom on the west, cutting off a similar triangle. Neither of these centrifugal ditches is accompanied by a bank; the north-east one is broken up by causeways into four segments, while the south-west one is continuous.

Traces of a fragmentary fifth concentric ditch occur under the race-course on the north side of the Camp—scarcely discernible on the surface, but recovered by percussion and visible in an air-photograph.

Excavations carried out in 1929 by the Brighton and Hove Archaeological Club under the direction of Mr. R. P. Ross Williamson and the present writer yielded abundant evidence of neolithic occupation.¹

The further excavations which form the subject of the present report were in the nature of an emergency. The Race Stand Lessees found it necessary to extend the pulling-up ground of the race-course, involving the levelling of part of the two outer rings of defences on the south side—parts which had already been partially levelled. As the Camp is scheduled under the Ancient Monuments Act, permission for the levelling was made conditional upon the threatened portions being first excavated under proper archaeological supervision. The lessees agreed to this and contributed a sum of £125 for the work, which the writer was requested to carry out. This he did with the assistance of Mr. B. C. Hamilton, who was responsible for most of the measuring and recording. In order that the extension of the course might be ready for the 1933 races, the preliminary excavation had to be undertaken without delay in the middle of the winter, viz. from 12th Dec. 1932 to 21 Jan. 1933.

The work done consisted in clearing out the filling from the whole of the threatened portions of the third and fourth ditches, and in stripping down to the bare chalk as much as seemed necessary of the rest of the area to be levelled. A section, 95 ft. long and 20 ft. wide, was stripped between the two ditches (see general plan, pl. xii), but yielded nothing at all except a hearth of uncertain date, consisting of a depression, 3 ft. by 2 ft. and sunk 3 in. to 5 in. below the chalk. The latter showed signs of having been burnt, but there were no finds. At the southern end of the stripped area there was also a small twin post-hole

¹ R. P. Ross Williamson, 'Excavations in Whitehawk Neolithic Camp, near Brighton', *Sussex Arch. Coll.* lxxi, 56-96.

WHITEHAWK NEOLITHIC CAMP, BRIGHTON 101

(Hole 1) which will be described in connexion with the fourth ditch. In view of the absence of signs of occupation in this area it did not seem worth while stripping the rest of the area between the ditches, except in the immediate neighbourhood of the latter.

THE FOURTH (OUTER) DITCH (D IV)

(pl. XIII)

The fourth ditch was cleared out for a length of 100 ft. in five cuttings (numbered C II to C VI; Cutting I was marked out but not dug, as it was found to lie mainly outside the area to be levelled). Each cutting was 20 ft. wide in the length of the ditch, and 40 ft. long across it, so that the bare chalk was stripped for at least 12 to 15 ft. on each side of the ditch. Cutting III was extended for 95 ft. northwards to connect with the third ditch, as already described, and Cutting V was extended 10 ft. in the same direction. The rampart had stood on the north side of the ditch, but had been previously destroyed. The extensions of Cuttings III and V sufficiently showed the absence of any regular sequence of stockade-holes under the rampart or of such palisade-trenches as have been found in German neolithic camps.

Eight small pits or post-holes were found:

Holes 3, 4, and 7 (see plan, pl. XIII) were recent stake-holes, 6 in. square, and 16 to 24 in. deep below the chalk, and each still contained the decaying remains of a stake.

Hole 8 was probably also recent, having been sunk into the silting of the ditch, where it was revealed in profile in Section I. Diameter, 18 in.; depth below turf, 2 ft.

Hole 1 was a twin post-hole, the eastern half being cup-shaped, 15 in. in diameter at the top, and sunk 12 in. into the chalk. The western half was also cup-shaped, 8 in. in diameter, and 9 in. deep. There was no evidence of date.

Hole 6 was situated exactly opposite Hole 1 on the other side of the ditch. It was cup-shaped, and measured 18 in. by 14 in. at the top and attained a maximum depth of 9 in. below the chalk. There was no evidence of date.

Hole 2 was a rectangular pit, 3½ ft. by 3 ft., sunk 2 ft. below the chalk, and with steeply sloping sides. Near the centre of the bottom was a hole, 6 in. in diameter, and 4 in. deeper. No evidence of date.

In view of the fact that this ground has been used for fairs, races, and various other purposes, it is not surprising that a variety of post-holes of different dates should be found. None of the above holes is of much importance, but Hole 5 is much more interesting.

Hole 5. This hole is situated near the middle of a chalk platform that juts out into the centre of the ditch from its north margin. The platform has the appearance of being half a causeway, and one gains the impression (well seen on the plan) that a smaller and earlier continuous ditch may have preceded a deeper and wider one which was interrupted by a causeway at this point. A study of the stratification of Section IV (fig. 1) does not, however, support this view. The platform being at a lower level than the surface of the undisturbed chalk elsewhere, and being covered by nearly 3 ft. of loose soil, was not detected by percussion before excavation. The hole resembled a good-sized post-hole, being 2 ft. 4 in. in diameter at the top, 1 ft. 9 in. at the bottom, and 2 ft. 1 in. deep below the top of the platform. The south wall of the hole was partly broken away. The infilling consisted of fine dark chalky soil containing quantities of molluscs (see report below), while at the bottom of the hole lay the skeleton of a partly dismembered roe-deer lying huddled upon its back (pl. xv, 1). There can be no doubt that this hole and its contained roe-deer are neolithic in date, though what purpose it can have served must remain conjectural. The hole itself closely resembles the neolithic gate-post-holes found in the third ditch excavations (described below), but it is difficult to see how it could have served any comparable purpose in the position in which it lies, nor would the bones of an animal be likely to have survived the weight of a massive post set up over them. It seems more likely that the hole was dug specially to receive the carcass of the roe-deer, and as we have plenty of evidence as to the casual methods of disposal of refuse and even of human remains by the occupants of the Camp, it seems easiest to believe that this careful burial may have been a ritual deposit of some sort—perhaps a foundation sacrifice. Dr. J. Wilfrid Jackson's report on the bones is appended below.

The Sections (fig. 1). Cuttings II, IV, and VI were dug before III and V, in order that the profile of the filling might be revealed every 20 ft. along the ditch. Six sections have thus been drawn. They well show the extreme irregularity of the sides of the ditch, in marked contrast to those of Iron Age camps. It may be that the interruption of these ditches by unnecessary causeways is but an exaggeration of this irregularity of digging.

All the sections show the same general features as regards the filling. Three turf-lines could be distinguished, and these may be termed (1) the present, (2) the penultimate, and (3) the post-neolithic. The first two are shown as thick black lines in the sections, because both are equally well-marked, and the

FOURTH DITCH SECTIONS

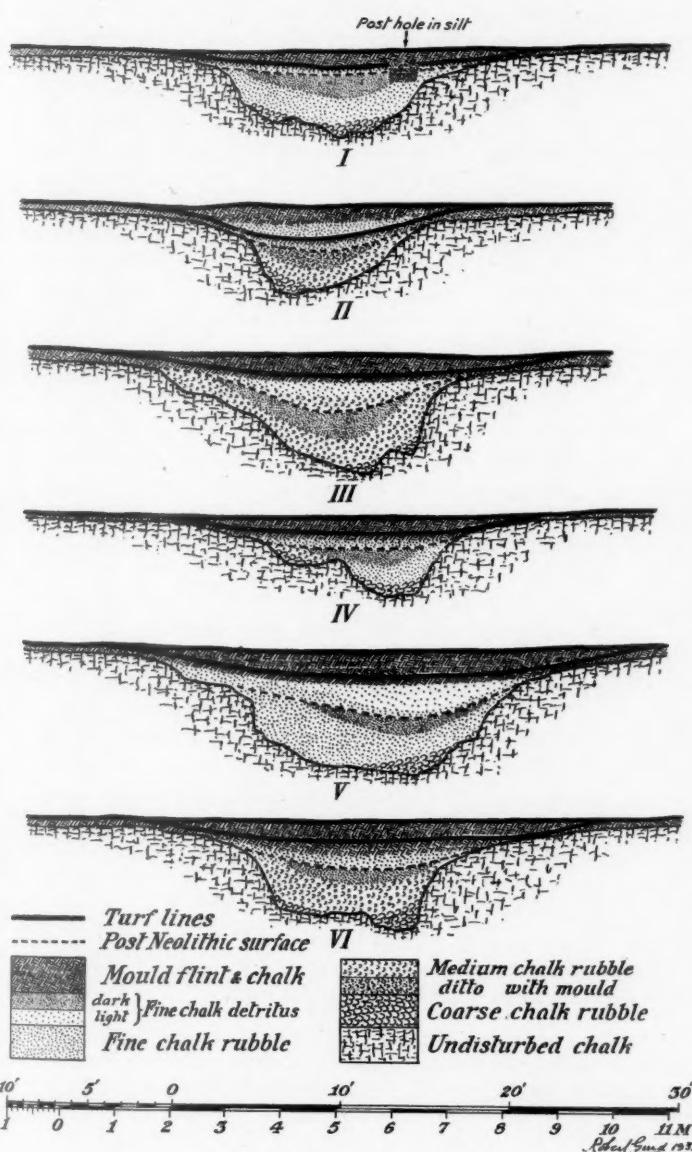


FIG. 1. Fourth Ditch, Sections

penultimate, though it cannot be absolutely dated, is probably not very old, having been buried as a result of a partial levelling of the rampart—probably in connexion with the race-course at some earlier stage in its history. The post-neolithic turf-line, on the other hand, is poorly marked, being indicated mainly by the mould-staining of the underlying fine chalk silt. It is shown in the sections by a heavy broken line, and marks the level at which grass began to grow after the desertion of the camp by its neolithic occupants, and when the natural process of silting was coming gradually to an end. Relics below this level are exclusively neolithic; those above it are not necessarily so. The penultimate and post-neolithic turf-lines are separated by a variable amount of chalk rubble and top-soil, the former indicating early attempts at levelling. Below the post-neolithic surface one sees the usual gradation of coarse, medium, and fine chalk silt resulting from the action of frost on the sides of the open ditch. In this connexion it is interesting to observe that three weeks after the conclusion of the excavation, during which time frosty weather prevailed, coarse rapid silting again took place, attaining in the angles of the ditches a depth of 8 to 12 in.¹

No specific occupation-layer occurred in the fourth ditch. Only 13 sherds of neolithic pottery were found altogether, 10 of which occurred together near the bottom of Cutting iv (spit 6), and represent, apparently, non-carinated vessels of Trundle type; the remaining 3 come from spits 4 and 8 (bottom) of Cutting v. A certain number of animal bones occurred at all levels, including some articulated vertebrae and ribs of ox in Cutting iv, spits 4 and 5. Fragments of red deers' antlers—not picks—were found in Cuttings v and vi at low levels, and at the bottom of Cutting vi a patch of grey soil represented wood-ash, accompanied by 6 calcined flints, several flakes and animal bones, but no pottery. The flint flakes from this ditch, noted at all levels, numbered only 322, of which 11 had serrated edges for use as saws. Flint implements were not common, the principal ones found being illustrated by figs. 78, 81, 83–5 (see also Dr. Grahame Clark's report below).

¹ During the same period the ditches became once more receptacles for local rubbish, especially the east end of the fourth ditch, which was nearly filled with an incredible quantity of scrap-iron, including bedsteads, baths, stoves, parts of motor-cars and bicycles, etc.

THE THIRD DITCH (D III)

(pl. XIV)

The third ditch was cleared for a length of 140 ft. in seven cuttings averaging 20 ft. wide and 25 ft. long in a direction transverse to the ditch. These are numbered C II to C VIII; C I was opened on the north side of the Camp in the 1929 excavations. In addition to this an area 120 ft. long and from 20 to 25 ft. wide, representing the site of the accompanying rampart on the north side of the ditch, was stripped to the bare chalk. The surface features so revealed will be described first.

Post-holes. Twenty-two post-holes¹ were found, but of these only six are at all certainly neolithic, and three more are probably so. The remainder, viz. Holes 4–6, 8, 9, 12–14, 18–22, clearly mark a slightly curved line of fence of no great antiquity, which runs diagonally across the area. Before excavation, as will be seen from the general plan published in Williamson's 1929 report, the line of this fence was marked by a faint scarp which has resulted from attempts to level out a patch of ground at the expense of the rampart. These post-holes, three of which (nos. 18–20) were traced in the filling of the ditch in C VII, show that that patch of ground, whatever its date, was delimited by a fence.

Holes 1–3, 7, 10, 11 are certainly neolithic, and mark an entrance into the Camp across the third ditch and its rampart. We believe that this is the first time that entrance post-holes have been found in a neolithic causewayed camp in Britain. It will be observed from the plan that two causeways interrupt this part of the third ditch. Of these, only the eastern one (Causeway I) formed an original entrance, and was flanked on the north side by two large post-holes (nos. 10, 11), presumably for gate-posts. These are 9 ft. apart (centre to centre), with 7 ft. clearance between them. Another pair of holes (nos. 3 and 7) lying 20 ft. to the north of the first pair and 21½ ft. apart (centre to centre), seem to mark an entrance passage through the rampart. The chalk forming the floor of this passage is worn into a slight hollow. Holes 1 and 2 also seem to be connected with this group. A single sherd of what appears to be neolithic pottery was found in Hole 1 and another in Hole 11.

¹ The post-holes were numbered in the order in which they were discovered, and to avoid confusion have not been re-numbered according to their proper grouping.

The individual holes have the following features:

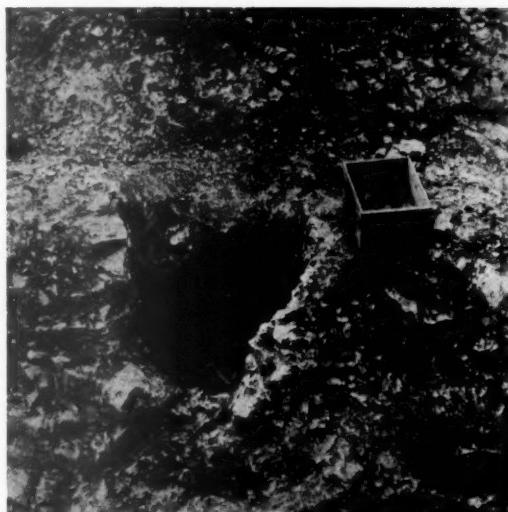
Hole	Diameter (inches)		Depth (inches) below chalk	Shape
	Top	Bottom		
1	11 x 10	9 x 8	7	Cup-shaped.
2	11	9	6	"
3	16 x 14	11 x 10	11	"
7	28 x 25	12 x 11	13	"
10	24 x 21	11 x 10	34	Sides vertical above, tapering to a concave bottom.
11	35 x 31	31 x 26	31	Nearly cylindrical; bot- tom flat and irregular.

As winter sunlight was inadequate for photographing the gate post-holes, a fairly good photograph was obtained by full-moon-light (pl. xvi, 1). The exposure was one hour (F 6·8).

Holes 15 to 17 lie in a straight line 23 ft. long, parallel to, and 11 to 12 ft. from, the north edge of the ditch in Cuttings vi and vii. This fact, together with their small size and cup shape, suggests that they may belong to part of the neolithic system, but their continuation could not be traced in either direction. Their dimensions are as follows :

Hole	Diameter (inches)		Depth (inches) below chalk	Shape
	Top	Bottom		
15	17 x 15	14 x 12	9	Cup-shaped.
16	18 x 12	15 x 10	7	"
17	12 x 10	9 x 9	6	"

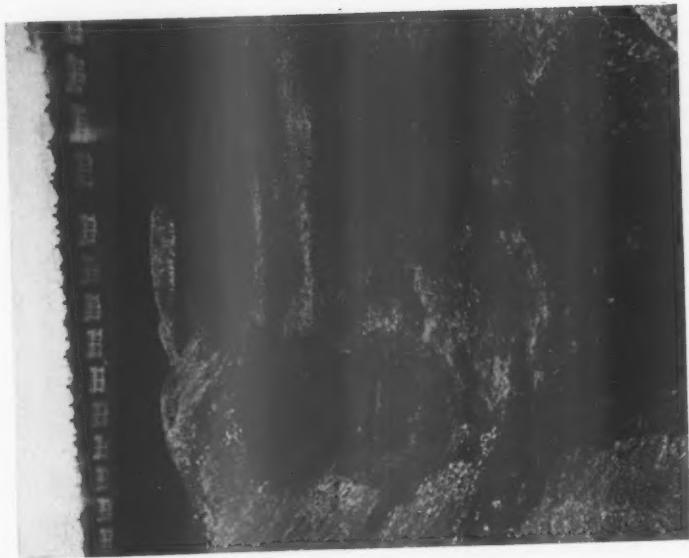
Pit I (pl. xviii, 1). This pit is separated by only 2 ft. from the southern lip of the ditch in C viii. Its top-diameter is 4½ to 5 ft., narrowing down to an average of 2½ ft. lower down, and its depth is 5 ft. below the chalk. The walls are very irregularly cut, and are undercut in several places. It was filled up with clean chalk rubble in which the only finds were : (1) part of the base of a flat-bottomed vessel, probably a beaker, at 4 ft. below the chalk lip; and (2) a flint scraper at 3 ft. 2 in. Occupying the mouth of the pit, at a depth of 1 ft. 7 in. below the turf, was a hearth, 3 ft. by 2½ ft., and 10 in. in depth, containing several fragments of beaker, a few bones, and two calcined flints. This pit, then,



1. Hole 5 (fourth ditch) showing bones of roe-deer



2. Fourth Ditch, section V (scale-rod marked in feet)

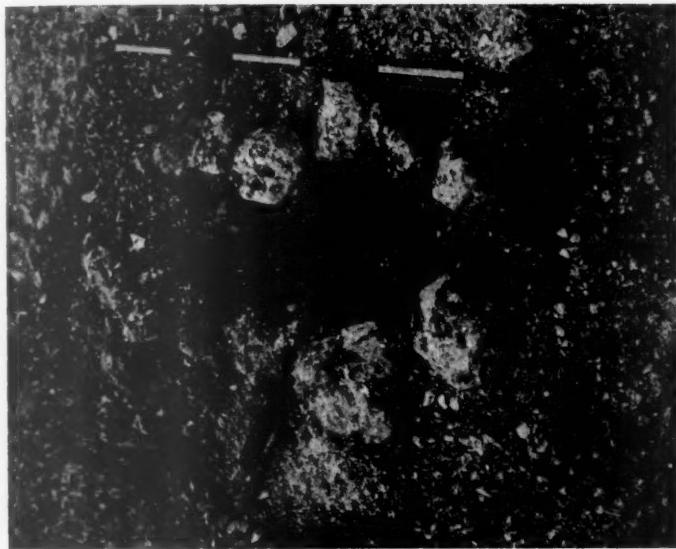


2. Third Ditch, looking west, with Causeway I and gate-post-holes in foreground



1. Third Ditch: Causeway I, with post-holes of gate; taken by moonlight

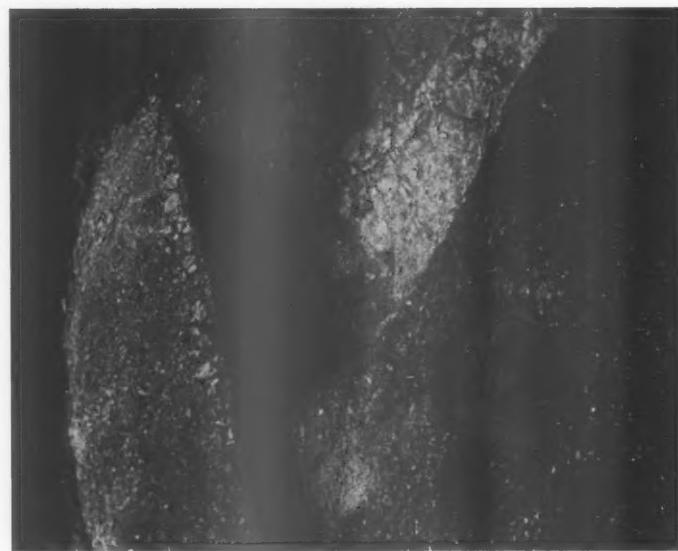
1. Third Ditch: Causeway I, with post-holes of gate;
taken by moonlight
2. 'Third Ditch, looking west, with Causeway I and gate-



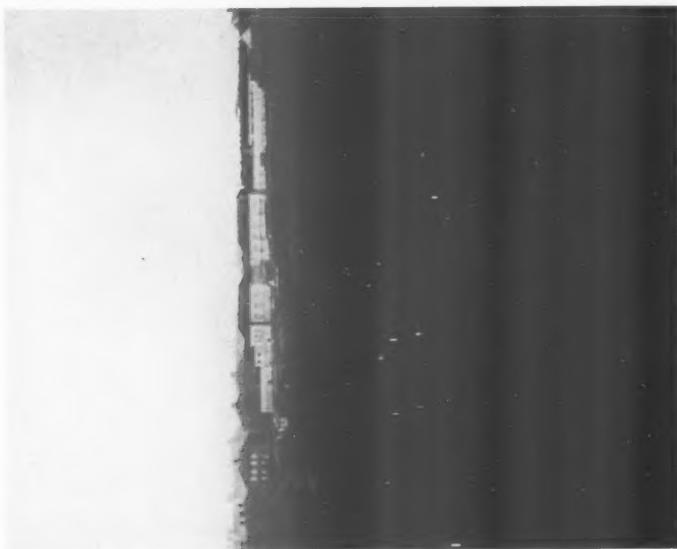
2. Skeleton II *in situ*, surrounded by blocks of chalk



1. Third Ditch, looking east, with Skeleton II in foreground



I. Third Ditch, Cutting VIII and Section VI, with Pit I
in foreground



2. Percussing the limits of the third ditch, marked out by
pegs; note causeway marked by four pegs in front of the
figure, also rampart beyond

is not later than the Beaker period in date, and probably not earlier.

The Earlier Ditch. As has been pointed out above, the stretch of the third ditch under investigation is interrupted by two causeways, of which the eastern (no. I) served as an original entrance, while no. II did not. A study of the plan (pl. xiv) makes it appear probable that before the existing segments of ditch were dug a very shallow ditch (1 to 1½ ft. deep) may have occupied the same general line, interrupted at Causeway II but not at Causeway I. One end of this ditch can be seen on Causeway II, its surviving portion divided into two by a row of chalk blocks. This would account for the fact that the surface of Causeway I is 1 to 1½ ft. below the general level of the chalk (and also for the fact that this causeway was not detected by percussion in the 1928 survey, though it was so detected just prior to excavation). The ledge on the north side of the main ditch in C v is also probably a relic of this shallow ditch.

The Sections (fig. 2). Cuttings II, IV, VI, and VIII were dug before Cuttings III, V, and VII, in order to reveal the profiles of the filling of the ditch, as in the fourth ditch. Six profiles have thus been drawn. Owing to the presence of a water-pipe which runs obliquely across the ditch in C II, Section I was taken on the line of this pipe instead of at the end of the cutting, and the triangular area east of the pipe was left unexplored in its lower levels.

In this ditch the sections show features comparable to those in the fourth ditch already described. The cutting of the sides of the ditch is, however, much less irregular. The same three surface-lines can be traced, the penultimate turf-line having clearly been buried when the rampart was destroyed. The post-neolithic surface is not, however, distinguishable as a turf-line, but is indicated by the upper limit of the fine silt, in accordance with experimental knowledge regarding the process of natural silting in chalk. The principal feature which distinguishes the profiles of the third ditch from those of the fourth is the existence of a dark band representing the original occupation or culture layer of the camp. This was regularly to be found either in or immediately above the medium silting, and must therefore date within a very few years of the digging of the ditch. The greater part of the pottery and other relics came from this layer, which, to all appearances, must have combined the functions of house, dust-bin, and cemetery.

Skeleton I. In the dark band of the occupation layer in C II a human skeleton was discovered lying in the middle line of the

ditch and almost immediately below the water-pipe. The body had been laid semi-prone on the left side, with the head to the north-west. The skull had been crushed by the weight of the labourer who was digging the spit above the skeleton—an accident that is difficult to avoid—but it has been partly restored. The shoulders and chest were prone, the right hand being placed in front of the abdomen; some of the finger bones were embedded in the mud adhering to the front of the lumbar vertebrae. The left arm was nearly straight and lay behind the back, the hand lying behind (south of) the semi-prone pelvis. The right hip and knee were acutely flexed, the knee lying 3 in. from the right elbow. The left hip was less acutely flexed, but both heels were within 2 in. of the pelvis. Nothing except one fossil *Echinocorys scutatus* was found in association with these remains, which had apparently been deposited in the open ditch, like other rubbish, and not buried in a grave that had been sunk in from above. There is no doubt that they are contemporary with the original occupation of the Camp.

Skeleton II. A second skeleton was found buried in a definite grave in the lower part of the occupation layer in Cv, the bulk of the neolithic pottery from this stratum coming from a position immediately overlying the grave. An elongated oval area, 5 ft. long and 1½ ft. wide, had been surrounded by ten large and a few small chalk blocks. In the space so formed the skeleton was lying, and had been covered with soil up to the level of the top of the chalk blocks, above which was spread a layer of charcoal (pl. xvii). Two of the large blocks had imperfect or broken perforations, and from the two spits underlying the skeleton came parts of two chalk weights, one large and one smaller, each broken through a perforation. This grave was clearly contemporary with the occupation layer and had not been dug down through it.

The skeleton was lying semi-prone on its right side, with the head to the south and resting the lower jaw on the right upper arm. The right elbow was bent to a right angle, with the forearm and hand pointing down towards the knees. The shoulders and chest were prone, and the left hand was near the face. Both hips and knees were flexed, but not strongly so. Certain bones were found displaced from their anatomical positions, particularly about the upper part of the body, but this must have been due to burrowing animals rather than mutilation or maceration before burial. Thus one metacarpal lay behind the upper edge of the right scapula; the first right rib lay behind the back, opposite the 7th dorsal vertebra; the left clavicle lay beside

THIRD DITCH SECTIONS

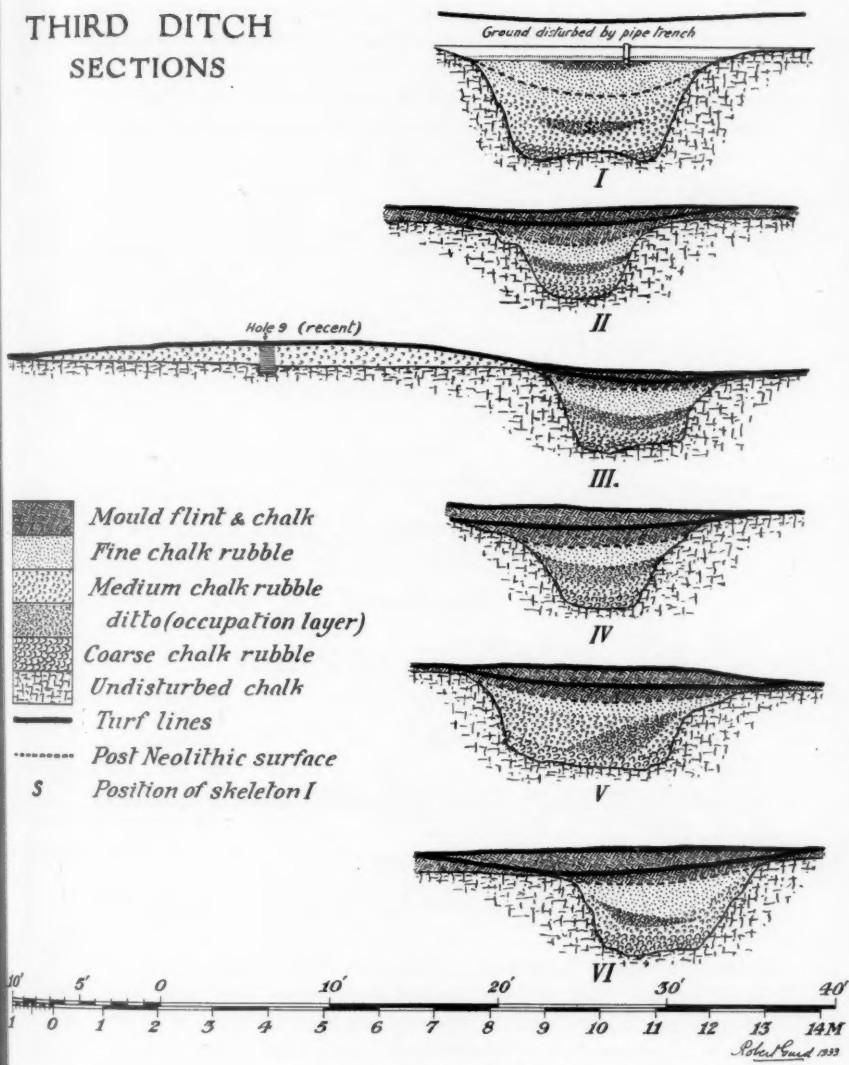


FIG. 2. Third Ditch, Sections

the left forearm bones; and the left half of the lower jaw was found beside the left elbow. Most of the small bones of the hands and feet eluded discovery altogether.

The skeleton of an infant was also found in the same grave, lying in the space between the left elbow and the knees. The

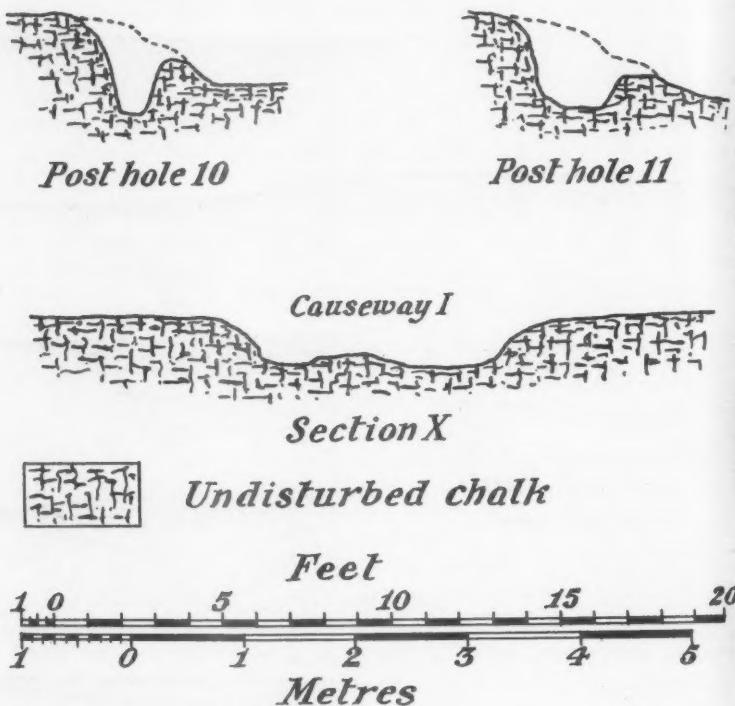


FIG. 3. Sections of Post-holes 10 and 11, and Section X across Causeway I

bones had been disturbed, and their minute size made it difficult to determine their relative positions, but most of the fragments of the skull lay towards the south, as was the case with the adult. One or two fragments of the infant's skull were, however, found adhering to the mud on the inner surface of the left ilium of the adult, suggesting that the infant may still have been *in utero*.

With the skeleton were found two small perforated pieces of chalk, perhaps pendants (figs. 87, 88), two fossil *Echinocorys scutatus*, and the lower half of the radius of an ox.

WHITEHAWK NEOLITHIC CAMP, BRIGHTON 111

Hearth, pottery, and other finds. In the occupation layer in C IV occurred traces of a hearth surrounded by a wide scatter of ashes. In close relation with this hearth were found (1) a quantity of neolithic pottery sherds; (2) parts of two human brain-pans and three small charred fragments of human skull; (3) a few animal bones and an antler of roe-deer; (4) one mussel, 2

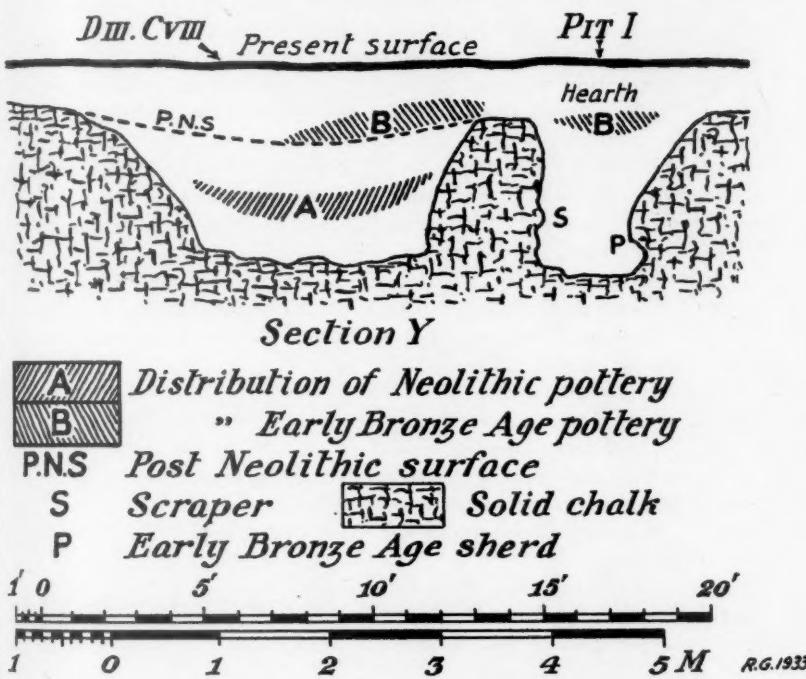


FIG. 4. Section Y through Cutting VIII (Third Ditch) and Pit I to show stratification of Neolithic and Early Bronze Age pottery

cockles; (5) 91 'pot-boilers' (calcined flints), and 22 fragments; (6) one small fragment of grain-rubber.

A fair quantity of neolithic pottery was found throughout the occupation layer in all cuttings, but especially in Cuttings IV, V, and VIII. Occasional sherds were found both above and below this level, but exceptionally so. The yield of pottery was not, however, anything like as plentiful as that obtained in the two inner ditches in the 1929 excavations. At a rough estimate 8 man-days in the inner ditch in 1929 yielded quite as much neolithic pottery as 252 man-days in the third and fourth ditches

this season. Mr. Stuart Piggott, whose report is appended, regards this pottery as a variety of Windmill Hill, a few pieces showing Peterborough influence.

Only in Cuttings VII and VIII was the stratification of the pottery significant. It will be recalled that a pit of Beaker date was found in C VIII close to the outer lip of the ditch. A spread of pottery, contemporary with this pit, was found to overlie the filling of the ditch in these two cuttings, resting immediately upon the post-neolithic surface, and separated from the neolithic pottery in the occupation layer of the ditch by a sterile band of fine silt (fig. 4). This means that after the desertion of the Camp by its neolithic inhabitants sufficient time elapsed for the complete natural silting of the ditch before the early Bronze Age pottery was deposited upon it. This latter consisted of beaker fragments mixed with pieces of thicker and coarser flat-bottomed ware. This pottery is discussed by Mr. Stuart Piggott below.

The flint-work in the third ditch was extraordinarily scanty; only 64 flakes were noted throughout the part examined. The worked flints have been examined by our Fellow Dr. Grahame Clark, whose report is appended.

One curious feature was the number of fragments of human skulls which were met with in all cuttings of this ditch except C VIII. They were mostly found in or about the occupation layer, and chiefly represent fragments of brain-pans, three such fragments having been charred in the hearth in C IV, as already noted. It is difficult to avoid the view that these may be relics of cannibalism.

Two small fragments of an antler-comb were found in C VIII, just below the occupation layer (figs. 89, 90). These are the first specimens to be found in the Sussex causewayed camps.

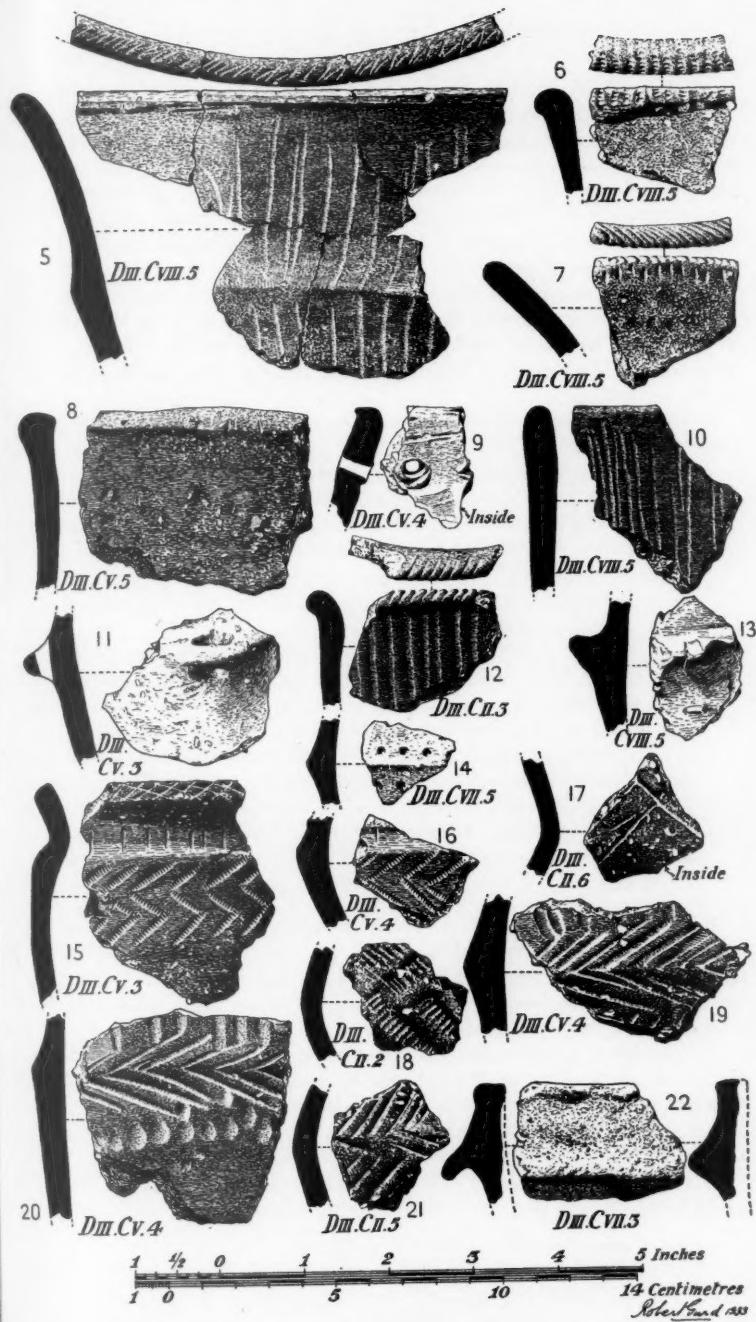
THE FINDS

In the following reports on the various classes of finds the provenance is indicated by abbreviations such as 'D III. C VI. 4'. This stands for 'Third ditch, Cutting VI, Spit 4', each spit being on the average about 11 in. deep.

REPORT ON THE POTTERY

By STUART PIGGOTT

THE NEOLITHIC POTTERY (figs. 5-40). In describing this, the 'normal' sherds will first be described, discussion of nos. 15-21, which form a distinct sub-group, being left to a subsequent section. Any generalizations in the first section are then to be understood as excluding these seven sherds.



Figs. 5-22. Neolithic Pottery

1. *Normal Neolithic Wares* (5-14, 22-5). The bulk of the pottery forms a homogeneous group within the great family of 'Windmill Hill ware'. The characteristics of this rather unfortunately named family have been discussed elsewhere¹: it is sufficient here to note that, writing in 1931, I suggested a subdivision of it into two main groups which I named A 1 and A 2. Whitehawk falls into the latter phase, which is distinguished from A 1 by certain developments of rims, shoulders, and lugs, and the freer use of ornament.

The salient features of the Whitehawk pottery from the first season's excavations, in 1929, were described by Mr. Reginald Ross Williamson in his report in *Sussex Arch. Coll.* lxxi, 57-96 (to which reference will be made as 'Whitehawk I'). Most of the 1933 pottery can be paralleled in the 1929 finds.

Ware. Three main textures of pottery can be distinguished at Whitehawk:

a. A hard, rather rough ware, with a tendency to flake into laminae in the thicker fragments. Well baked to a greyish buff or buff red colour. The surfaces are normally smoothed over, but are nevertheless irregular and have lumps caused by the coarse backing of large flint fragments with very occasional pieces of shell. This ware constitutes the bulk of the sherds from the site, particularly those without ornament.

b. A very good fine ware, usually tending from grey to black, well mixed, hard and compact, with a relatively small admixture of very fine flint grit as backing. This is the normal ware for the fine bowls of Form G, and most of the decorated pots.

c. A relatively small amount of softish ware, buff red outside and black inside, with backing exclusively of abundant shell fragments. No decorated sherds occur of this consistency, and the rims are invariably very simple. This very distinctive ware occurs in the following cuttings of the Third Ditch: C iv. 5, C v. 5, C vii. 5, C viii. 6, C viii. 5.

Forms. The most distinctive type is the graceful carinated bowl of my Form G. This is represented by figs. 5, 23, and 24, and occurred abundantly in 1929 (nos. 20, 21, 23, 26, and 30 of Whitehawk I). Decoration on this type is mainly of vertical scorings or flutings, with diagonal strokes on the rim or shoulder.²

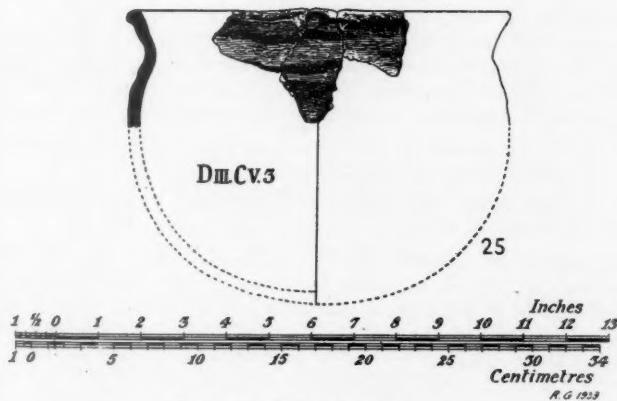
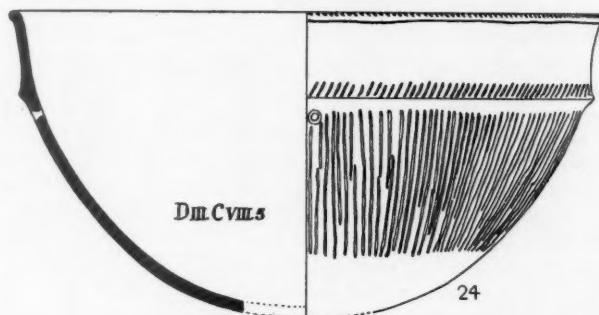
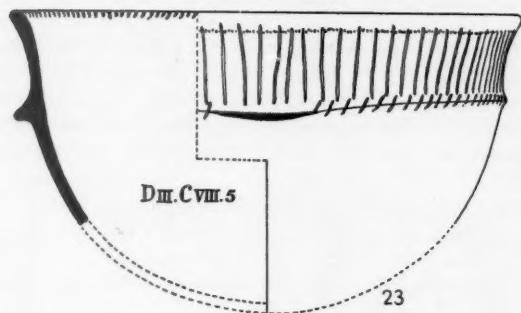
Fragments of simple undecorated pots with slightly thickened or inbent rims (nos. 29 and 32 of Whitehawk I) occurred again in 1933, with either flint backing (D iii. C vii. 6) or with shell (D iii. C vii. 5).

An unusual form is fig. 25 from D iii. C v. 3: the upper part of an undecorated pot with everted rim.

A globular vessel of my Form C, swelling out below the rim, is indicated by fig. 9, and may be compared with Whitehawk I, no. 27.

¹ *Arch. Journ.* lxxxviii (1931), 37 ff. and 67 ff.

² The abnormal fern-leaf impression from the Isle of Man is certainly a local 'sport' (*Antiq. Journ.* xii, 153).



Figs. 23-5. Neolithic Pottery

A.G. 1933

Rims. These may be quite simple (10, 26); slightly 'beaded' or thickened (6, 8, 24, 25, 31, 38, 39); hooked over (12, 28, 29); flattened (9, 22, 27), or angularly everted (36, 37). Fig. 35 has a curious cordon applied below the lip, and fig. 34, with shell backing, has a remarkable groove and shoulder below a flattened rim projecting outwards only.

Lugs. The typical form is my *a 2*—oblong unperforated (23)—but an example occurs of *a 4* (hollow on upper side) (13), and a good vertically perforated lug (*b 2*) (11). A very interesting lug is fig. 22, formed by making a hollow beneath a cordon or shoulder. This appears to be without parallel.

Decorations. Very restrained, being mainly limited to vertical scorings or flutings (5, 10, 12, 23, 24); diagonal scorings or nail-marks on rims (5, 7, 12, 23, 24, 31, 39); diagonal scorings on shoulders (23, 24). Pin-prick ornament occurs on one sherd (8) and rather larger holes above and below the carination on another (14). Perforations just below the rim, made with a bone point, also occur (9). Finally fig. 6 has a decoration of closely spaced rounded impressions in line across the rim, which appear to have been made by the impression of a necklace of small beads.

This decoration is remarkable though not without parallel, ornament by means of a bead necklace being found on a large bowl of Form G from an unpublished habitation-site at Michelmersh in Hampshire.¹ The beads would in all probability be some form of small spherical seed.

Fig. 41 (a neolithic stray in the Early Bronze Age hearth) has ornament made with a four-toothed comb, and fig. 46, from the same site and also probably neolithic, has crowded vertical fingernail marks below a slight shoulder.

2. *Abnormal Neolithic Wares* (15–21). From two cuttings made in the Third Ditch in 1933 came seven sherds of pottery exhibiting features of ornament that cannot be reconciled with the typical *A 2* Windmill Hill pottery with which they were associated. These sherds are illustrated in figs. 15–21. Three came from *D III. C II* and four from *D III. C V*.

The decorative features distinguishing these sherds are as follows:

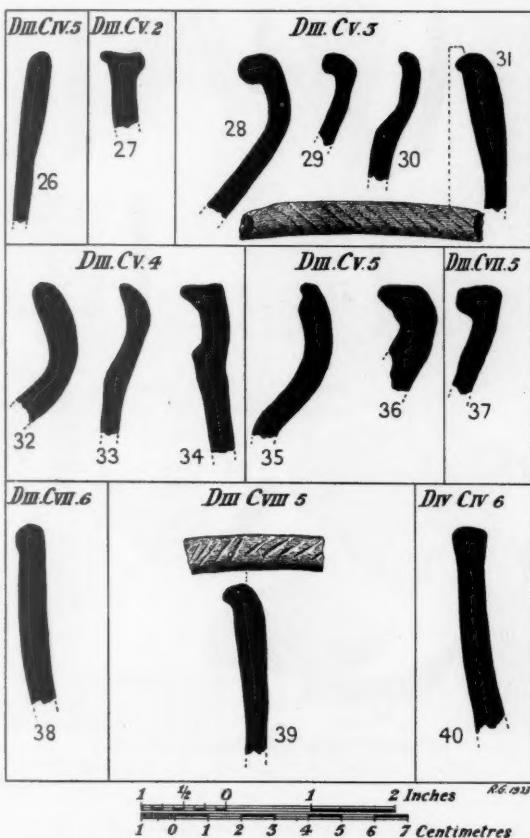
- a.* Zigzag or herring-bone ornament (figs. 15, 16, 18, 19, 20, 21).
- b.* Criss-cross or intersecting incisions (figs. 15, 17).
- c.* Impressions made with a 'whipped cord'—i.e. a fine cord or thread wound spirally round a core (figs. 15, 16, 18).

These motifs are unknown on Windmill Hill ware, but are entirely characteristic of the second great family of British neolithic pottery—Peterborough ware. One's first reaction to these sherds at Whitehawk is therefore to regard them as intrusive and possibly subsequent to the main occupation of the Camp.

The sherds themselves are not however typical 'Peterborough ware'. As regards texture, they are of identical consistency with the normal

¹ *Arch. Journ.* lxxxviii, 138; *Map of Neolithic Wessex*, no. 46. Report to appear shortly.

Windmill Hill wares of the settlement (wares *a* and *b*), while the forms are not entirely typical—18, 19, 20, and 21 might belong to any normal Whitehawk pot, and 15, the most convincing, approaches the Peterborough form but is lighter and thinner than one would expect. Finally 19 and 20

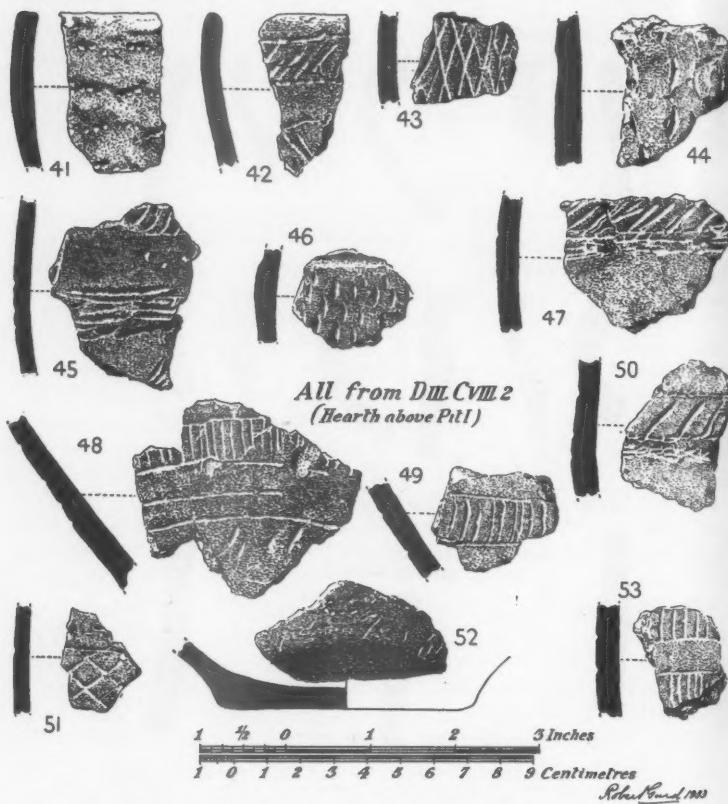


Figs. 26-40. Neolithic Pottery

have not only the abnormal incised chevrons, but finger-tip fluting in the purest Windmill Hill tradition.

It will be instructive to examine the archaeological horizons from which the debatable sherds come, and their associations where significant. It should be emphasized that all the evidence points to a single period of occupation at Whitehawk, and actual levels in the ditch siltings count for less than might be supposed. In 1929 it was noted that 'portions of the same or similar pots were found at all levels, only one period being

represented',¹ and the conclusion drawn was that 'the camp must have been inhabited by a large population for a comparatively short time'.² The very restricted Early Bronze Age occupation found in 1933 is quite distinct and separate.



Figs. 41-53. Early Bronze Age Pottery from Hearth above Pit I

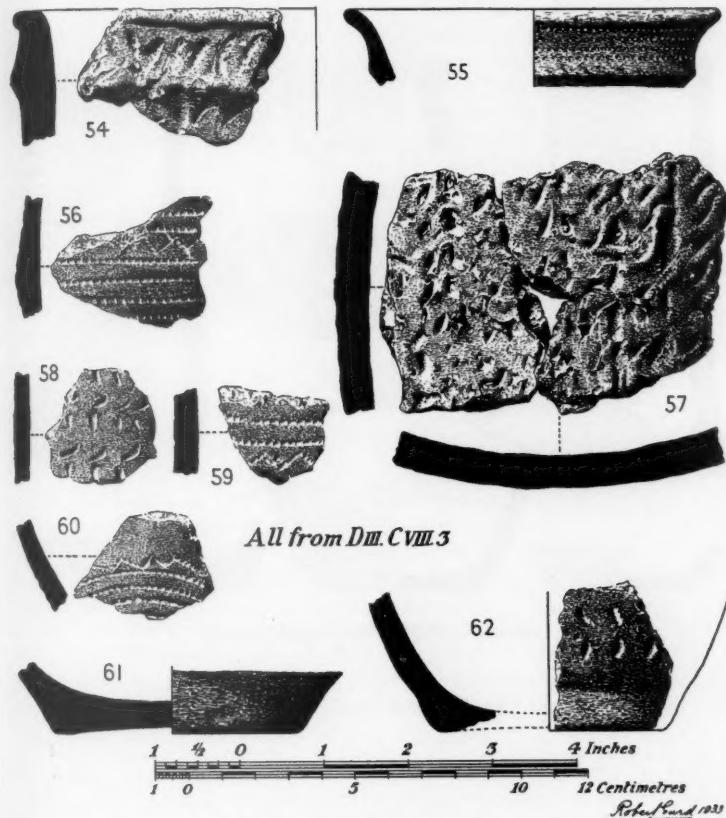
All seven sherds came from the Third Ditch. In C II, spit 2, yielding fig. 18, is relatively high, but in the same cutting spit 5 produced fig. 21, and spit 6 fig. 17—both being obviously primary. C V produced fig. 15 in spit 3—a spit which also yielded such exemplary Windmill Hill ware as figs. 11 and 28-31. From spit 4 of the cutting came the abnormal sherds 16, 19, and 20—but also figs. 9 and 32-4. So we have no alternative but to regard the sherds as intimately associated with the primary occupation of the Camp.

¹ Loc. cit., p. 61.

² Loc. cit., p. 87.

WHITEHAWK NEOLITHIC CAMP, BRIGHTON 119

Since, as we have seen, the sherds show evidence of hybrid techniques we cannot say that they represent an odd pot or two acquired by trade. We are forced to the conclusion that they were made, probably at Whitehawk itself, under Peterborough influence.



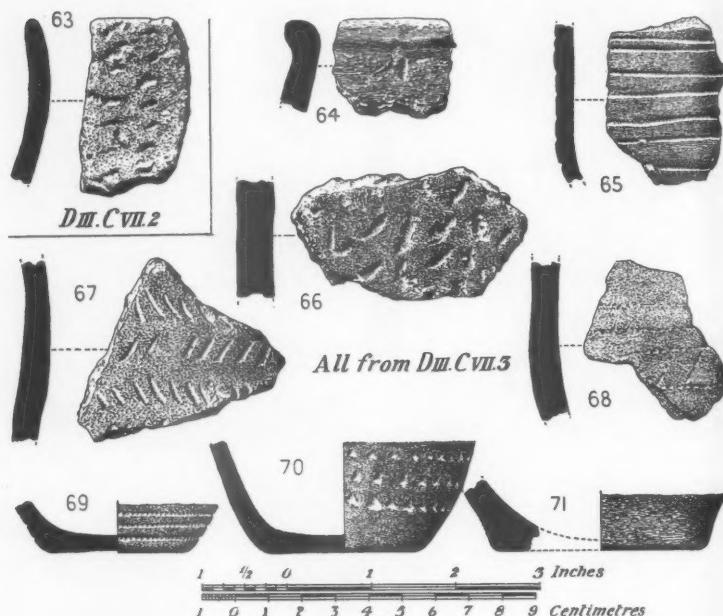
Figs. 54-62. Early Bronze Age Pottery (D III. C VIII. 3)

Peterborough settlements are known from Sussex, and there is nothing improbable in there having been one not far from Whitehawk.

The implications suggested by this hybridization are important, but owing to exigencies of space cannot be dealt with here. The writer hopes to discuss the question in a separate study elsewhere.

THE EARLY BRONZE AGE POTTERY (figs. 41-71.) The small series from an Early Bronze Age site is secondary to the main occupation of the Camp, and is of some interest. Of the sherds illustrated, figs. 42-3, 45, 47-53, 55-6, 58-62, 65, 67-71 are all more or less typical beaker

sherds. Those from the hearth appear to be a vessel of Type A, with straight neck (cf. fig. 42) roughly ornamented in zones of vertical or oblique strokes between horizontal lines, alternating with plain bands. The work is of poor quality. Other fragments show 'lattice-work' ornament of incised lines. Figs. 56, 59, and 60 are sherds from a well-decorated



Figs. 63-71. Early Bronze Age Pottery (D III. C VII. 2, 3)

beaker in hyphenated technique, with horizontal lines and zigzags recalling Type B vessels. Fig. 65 shows plain horizontal lines and 68 hyphenated technique. Fig. 69 has lines of cord ornament, and 63 is abnormal but is probably the neck of a rough beaker with triangular impressions. The cordon below the rim of 55 is unusual, but can be paralleled in Wales and elsewhere in Britain, where it is by Dr. Fox considered a late feature.¹ It also occurs on some Continental beakers.²

Of particular interest are the non-beaker sherds, figs. 44, 54, 57, 64, and 66. They are all of heavy thick ware, and with the exception of 64 have rough rusticated finger-nail ornament.

¹ *Arch. Camb.*, 1925, 16, 24.

² e.g. on beakers from Lemseloo, Holland. Bursch, *Die Becherkultur in den Niederlanden*, Taf. I, 1, 2.

There is an increasing body of evidence that the beakers are not the only Early Bronze Age pottery in England; among the other types that can be distinguished is one with heavy finger-nail ornament such as this from Whitehawk. It occurs in profusion at Woodhenge, where it assumes fantastic forms, and has recently been identified at the Plantation Farm Early Bronze Age site in the Cambridgeshire fens.¹ Our fig. 54 may be compared with nos. 11 and 14 from Plantation Farm, and our beaker fragment 58 suggests comparison with no. 3. Fig. 57 has the 'paired' finger-nail ornament of Woodhenge no. 85, and the untidy decoration on the beaker from the hearth is quite reminiscent of Woodhenge technique.

The origin of this coarse nail-ornamented pottery is at present obscure, but it seems intimately associated with the beakers and not connected with Peterborough neolithic ware, to which it might at first sight be thought to bear some resemblance. Certainly at Whitehawk the whole group must be Early Bronze Age.

REPORT ON THE FLINT IMPLEMENTS

By GRAHAME CLARK, M.A., Ph.D., F.S.A.

The following inventory records the most important flint objects obtained from the excavation :

Arrow-head.—A fine leaf arrow-head showing no angularity of form. One tip missing. D III. C v. 2. Illustrated (fig. 72).

Polished axe fragments.—Two fragments of polished flint axe :

(i) A considerable fragment showing a bevelled side and convex faces. Calcined. D IV. C vi. 5. Illustrated (fig. 85).

(ii) A flake struck from the side of a polished flint axe showing similar flattening. D IV. C v. 9. Illustrated (fig. 81).

Serrated flakes.—Ten serrated flakes, of which 6 show edge lustre, one is calcined, and 3 show no lustre. Two specimens are serrated on both edges, one of which is illustrated (fig. 73).

Edge-trimmed flakes.—Two flakes show uneven edge trimming of similar character to that seen on Miss Liddell's 'bevelled' flakes from Hembury. One, D III. C VII. 2, is illustrated (fig. 74).

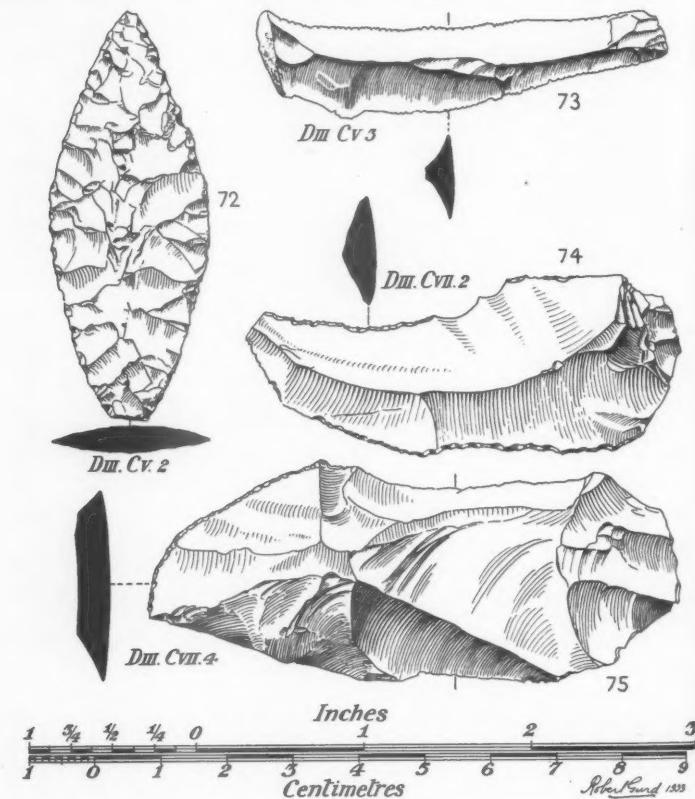
Used flakes.—Four without secondary work show distinct signs of use. D III. C v. 2, D III. C v. 3, D III. C VII. 6, D IV. C III. 3.

Scrapers.—Out of the 23 scrapers no less than 18 retain some portions of cortex. As regards form, 17 examples are of the ordinary horseshoe form, while the other 6 are more elongated and have the secondary work confined to one end; of the former the following are illustrated, D III. C VI. 3 by fig. 77, D III. C III. 6 by fig. 76, and D III. C VII. 2 by fig. 79, while of the latter D III. C VII. 4 is illustrated by fig. 80. Two of the illustrated specimens (figs. 76 and 79) show secondary work exceptionally

¹ *Antiq. Journ.* xiii, 266 ff.

fine for neolithic scrapers; in both cases they show the shallow scale flaking more usually associated with the Early Metal Age.

Choppers.—A number of rough choppers was obtained, the best example, D III. C. iv. 5, being illustrated by fig. 82.



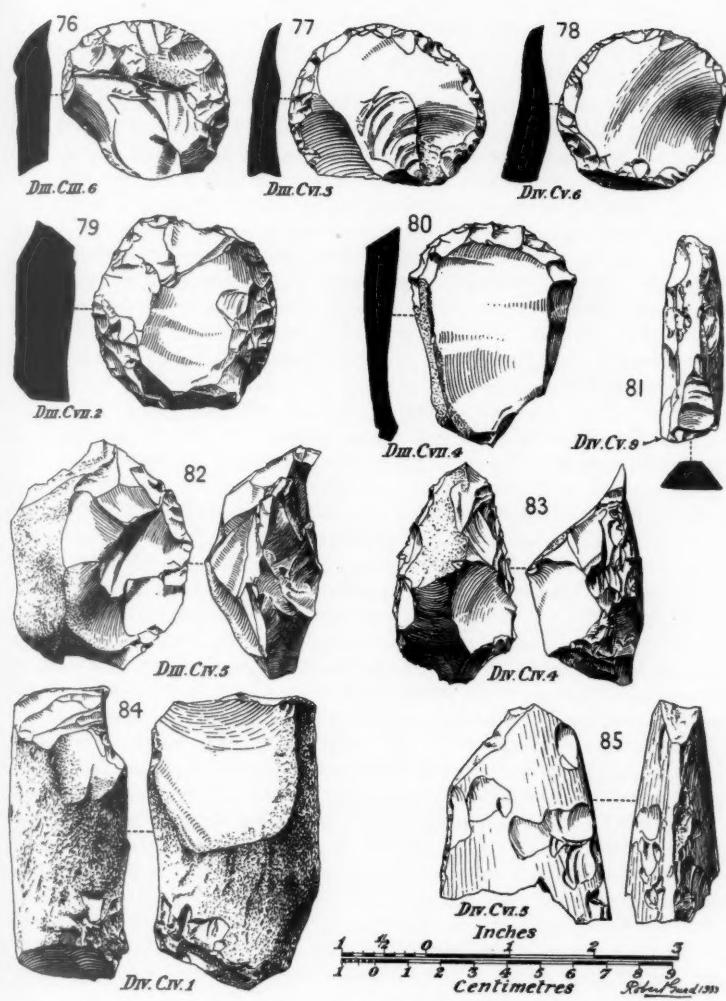
Figs. 72-5. Flint Implements

Various.—An object of unexplained use, D IV. C IV. 4, is illustrated (fig. 83).

Flakes and cores.—A great quantity of waste from flint-knapping was obtained in addition to the finished objects especially noted.

All the flints are patinated, some being pure white in colour, while others show grey mottling. Much of the flint shows the thick cortex and general appearance of mined flint.

Apart from the quality of the secondary work remarked on two scrapers the flints do not differ from those obtained during the 1929 excavations, and are typical of the Windmill Hill culture.



Figs. 76-85. Flint Implements

REPORT ON THE HUMAN REMAINS

By Miss M. L. TILDESLEY

The skeletal remains found by Dr. Curwen in excavating the neolithic site called Whitehawk Camp are those of not less than eight individuals: three whose skeletons are fairly complete (two adults and an infant), and the rest represented almost entirely by cranial fragments scattered in the ditch. As some of these fragments had no point of contact with those which went to build up the partially reconstructed crania, one cannot state categorically that there were no more than eight individuals all told; but there was no difficulty in supposing that the few left-over oddments belonged. They were therefore assigned in each case to the most probable of the five smashed and scattered crania, and the whole of the material was thus divided up between eight individuals. These will now be described in order.

No. I. First we have the undisturbed skeleton found in the ditch. It is that of a young woman whose age, as indicated by the union of all epiphyses, complete openness of all cranial sutures, and somewhat worn wisdom teeth, is between twenty-five and thirty years. She was short of stature, her most probable height, whether estimated from right femur alone (max. L. = 376 mm.), or right femur and humerus together (hum.: max. L. = 274 mm.), is 4 ft. 9 $\frac{1}{2}$ in. Her teeth were all complete at death (though a lower central incisor has since been lost) and all healthy, but they exhibit a striking amount of wear for so young a person, all but the wisdom teeth having been worn down into the pulp cavity, though this has been completely successful in protecting itself by the formation of the secondary dentine. It seems clear, from the amount of wear on the teeth as a whole, that the food of this woman must have been hard and perhaps gritty. But that is not the whole story: the upper incisors and canines are greatly worn and rubbed down on the inner part of the crown, too far inside the mouth for the corresponding lower teeth to reach them. The lower teeth are not so badly worn down, but they too are rubbed and highly polished on the inside. It is as though this woman had to straighten out or stretch something by pulling it through her clenched front teeth. Her palate exhibits a strong torus such as is often explained as being the result of strenuous tooth-work (though it certainly also occurs—perhaps with less frequency—among people who have obviously not used their teeth at all hard). Her shin-bones and astragali exhibit the marks that are usually interpreted as the effects of squatting. The thigh-bones exhibit the kind of back-to-front flattening which is more characteristic of the earlier than the more modern races of Britain (platymeric index: R. 68·4; L. 66·7). Finally, the skull-type is that which we associate particularly with the neolithic peoples. An extensive series of measurements has been taken on this as on the other skulls, and will be preserved for eventual publication in a larger neolithic series. Only cephalic indices need be given here. In this cranium post-mortem pressure has somewhat distorted the left parietal, so that one can only get a fairly close estimate of maxi-

mum skull-breadth ; this would give us an estimated breadth-length index of 71·9, just about the mean value for neolithic crania.

No. II. The second skeleton was again that of a woman, but younger, twenty to twenty-five years of age. Only the symphysial epiphyses and those at the sternal ends of the clavicles remained ununited ; growth in stature had ceased, and she was even a little shorter than the first woman. Her most probable height as estimated from the right femur was 4 ft. 8½ in., or from right femur and humerus 4 ft. 9 in. (R. femur, 363 mm. ; R. humerus, 277 mm.). Her lower wisdom teeth were fully up, but the upper were still somewhat short of the occlusal position. All the teeth were present at the time of death, and the 27 that are still retained are perfectly healthy, and, as might be expected, less worn than those of the older skeleton. 'Squatting facets' are in evidence. A few anomalies are to be recorded in this skeleton, such as occur—perhaps in different proportions—in any racial group : metopic suture retained ; posterior third of sagittal replaced by ossicles ; perforated olecranon fossae ; unusually large foramen magnum (0·47 mm. long) with a pair of tubercles on its anterior border. As in the case of skeleton no. I, the flattening of the thigh-bones is shown in a low platymeric index (R. 72·2 ; L. 71·7). The skull-shape is characteristically neolithic, and it has a cephalic index of 71·4.

No. III. In the same grave as the remains of the young woman last described was the skeleton of an infant. It was evident to the excavator that there had been disturbance of the bones in this grave, probably by burrowing animals. It may be added that this disturbance had done more than merely displace some of the bones within the grave, for three fragments of the adult skeleton—part of the frontal, the 4th sacral vertebra, and the left cheek-bone—were found among the pieces of bone gathered from the ditch. Also the appearance of the fractures lent no support to any suggestion of pre-mortem injury or mutilation : they had all been made in dry bone.

The disturbed position of the infant bones left it uncertain whether the child had been born, and the finding of some fragments of infant skull adhering to the inner surface of the pelvis suggested that the child was in fact still intra-uterine when the mother died. Comparison shows that this infant's bones are larger than those of most of the full-time skeletons preserved in the Royal College of Surgeons' Museum, though less developed than one which is described as 'skeleton of an unusually well-developed still-born male child, weighing ten and a quarter pounds'. In view of the smallness of the mother—about 4 ft. 8½ in. tall and slight in proportion—and in view of the unlikelihood of the father's being a very big man (neolithic man was not, on the whole), it seems reasonable to conclude that this is less likely to have been the skeleton of a large foetus, than that of an infant a few weeks old.

No. IV. The fourth individual is represented by the greater part of the parietals and occipital, the pyramidal bones of the ear, and a few other fragments. The sutures are all open, and the individual would at most be a young adult (in the twenties) and not younger than the middle teens at least. The few dimensions that can be taken are practically the same

as those of skeleton no. I : the bone is thicker, though that of skeleton no. II is about the same. The inion is rather better defined than in either of the others, and though it is hardly possible to pronounce upon the sex, if a guess had to be made, mine would be a young male.

No. V. The fifth is a calvarial fragment consisting of a nearly complete frontal and the anterior two-thirds of the parietals. The sutures are again quite open, the bone of about the same thickness as no. IV ; the frontal of the same size as that of no. I and the glabellar region rather more prominent. At a guess, again a young male, though again quite possibly a woman. The shafts of two right femora and a metatarsal may be assigned to nos. IV and V. The two femora are flattened as before, with a platymeric index of 71.7 and 65.5 respectively.

No. VI. A fragment consisting of the greater part of the left parietal, to which is attached part of the right parietal and left frontal, determines the existence of a sixth individual. To this I have assigned also an imperfect occipital, a left temporal, a fragment of frontal which includes glabella and naso-frontal suture, the greater part of a palate, part of a fibula, and one finger and two foot bones. The imperfect palate shows that this person had already acquired second permanent molars (part of whose sockets remain) and was thus probably already in the teens ; the appearance of the other portions indicates that he—the occipital suggests that the sex was probably male—had not advanced very far on the road towards the twenties.

No. VII. Rather more of calvaria VII could be pieced together than of IV, V, and VI, so that we have a fairly complete frontal and occipital linked together, though rather sketchily, by pieces of parietal, and carrying also an imperfect right temporal. The calvaria thus presented is definitely non-adult, and a half-palate which has been assigned to it (together with some other fragments of vault, and parts of a rib, radius, fibula, and humerus) gives us the age of this child, by its newly erupted second permanent molar and erupting canine, as about 11-12 years. The large size of the teeth indicates pretty surely that this was a boy.

No. VIII. The most eloquent part of no. VIII is the front portion and left side of a lower jaw. With this have been grouped a number of thin cranial fragments partly pieced together, among them a fragment of occipital, lateral to the foramen magnum, which has not yet achieved the union with the basilar portion that is due to take place about the sixth year ; also a right collar-bone. In the mandible we find the first permanent molar up and already somewhat worn ; the left central permanent incisor erupted, very much askew and immediately in front of the skewed socket of the right central ; the lateral incisors nearly up. Age, about six years.

The eight individuals whose bones were found by Dr. Curwen thus prove to be all young, the oldest under thirty, the youngest an infant.

REPORT ON THE ANIMAL REMAINS

By J. WILFRID JACKSON, D.Sc., F.G.S.

The animal remains form an interesting series. As is usually the way, most of the bones have been broken in order to extract the marrow, and very few are sufficiently perfect to permit of measurements being obtained.

The remains consist of those of wild and domesticated animals. Belonging to the first group are fragmentary antlers of red deer and the bones and antlers of roe-deer. There is also an almost entire skeleton of the latter animal. The second group comprises the remains of oxen, sheep, goat, and pig, together with the scanty remains of dog.

Wild Animals

Red Deer. This animal is represented by fragments of antler from D III. C VII. 5, D III. C VIII. 6, D III. C VII. 7, D IV. C VI. 6, and the base of an antler from a mixed group D III. C II. 4, 5, 7 and D III. C V. 3, 4. The latter shows it to have been a shed specimen.

Roe-deer. There are several antler fragments and a few broken limb-bones of this animal from eight of the different spits excavated. Some of the antlers show the base and belong to shed specimens. There is a complete metacarpal bone from a mixed group (D III. C II. 5, 6, 7 and D III. C VI. 3, 4): it measures 170 mm. in length and has a diameter of 13 mm. at the middle of the shaft. The most interesting group of bones belonging to this animal are those of an almost entire skeleton of a female which I examined at the British Museum while they were being set up. The skeleton was found in a small pit resembling a post-hole. It lay huddled on its back and was partially dismembered, and was accompanied by a large number of snail-shells. The skull and lower jaw had been badly broken, and it was found necessary to model some portion. Few reliable measurements were thus obtainable. As associated skeletons are of rare occurrence, the following dimensions may be of some service. They are placed alongside those of a recent male skeleton in the British Museum (1910-11-29-4).

Measurements of bones of Roe-deer

	Whitehawk Camp (Neolithic, female)		British Museum (Recent, male)	
	Length	Mid-shaft	Length	Midshaft
Metacarpal .	167	13	158	13 mm.
Metatarsal .	198	13	181	13 "
Radius .	175	15.5	161	16 "
Humerus .	153	12.3	147	14 "
Femur .	192	15.3	182	15.5 mm.
Tibia .	237	15.6	225	16.5 "

The measurements of the Whitehawk Camp specimen were taken from the articulated bones and are correct within a millimetre or two. It will be seen from these dimensions that the bones of the neolithic female specimen are longer than those of the male skeleton in the British Museum.

The height of the mounted specimen of the former is 96 cm. at the shoulder.

The bones of roe-deer from other neolithic sites show the same greater length, as follows :

	<i>Dog Holes Cave, Warton Crag</i>		<i>Perthi-chwareu Cave, North Wales</i>	
	Length	Mid-shaft	Length	Mid-shaft
Metacarpal	.	—	169	13·5 mm.
"	.	—	165	13·6 "
Metatarsal	.	206	14·6	193
"	.	199	13	—

Measurements of teeth of Roe-deer

	<i>Whitehawk Camp (Neolithic, female)</i>		<i>British Museum (Recent, male)</i>	
Upper jaw :				
Full tooth-row	.	64	56·5	mm.
Three molars	.	37	30·5	"
Lower jaw :				
Full tooth-row	.	70	63	"
Three molars	.	41	37	"

As in the limb-bones, these are of larger dimensions in the neolithic example.

Owing to the modelling of portions of the skull and lower jaw of the Whitehawk Camp specimen, other measurements were considered unsafe.

Domestic Animals

Ox. The remains of ox are very abundant and this animal appears to have been the chief source of food for the inhabitants of the Camp. Most of the limb-bones are very imperfect, having been split and broken to extract the marrow. The few lower jaws are also imperfect and the skulls have been badly broken up. This renders it impossible to obtain the important measurements necessary for the study and identification of breed. Notwithstanding this unfortunate drawback, the imperfect specimens are of considerable interest, and show that the animal concerned is not the small Celtic ox of the Early Iron Age, known as *Bos brachyceros* Owen (= *Bos longifrons* Owen), a skull of which is figured in my All Cannings Cross report of 1923.¹ The Whitehawk Camp animal was more robust, with larger horns and wider skull. Remains of the same general type have been found at Woodhenge, Wiltshire, and were described by me in 1929 with a figure of the horn-cores.² I have since seen similar remains from other places, including the ditch at Stonehenge, and hope to describe them shortly.

¹ *The Early Iron Age Inhabited Site at All Cannings Cross Farm, Wiltshire*, by Mrs. Cunnington, Devizes, 1923 (pl. 52).

² *Woodhenge*, by Mrs. Cunnington, Devizes, 1929 (pp. 64-9, pl. 51).

Ox remains occurred in all the Cuttings at Whitehawk Camp, and no purpose will be served by giving their locations. Measurements, where obtainable, have been taken for future use. The only particulars worthy of mention in this report are as follows: a metacarpal bone from D III. C VIII. 7 measures 209 mm. in length and has a mid-shaft diameter of 30 mm., and a much-broken frontlet with large and damaged horn-core from D III. C VIII. 6 has a least frontal width of 168 mm. The metacarpal agrees essentially with those from Woodhenge, and the frontlet is considerably wider than in those from Early Iron Age sites. The imperfect condition of the frontlet renders it impossible to obtain other satisfactory measurements. There is, however, sufficient of one side to show that the occiput is notched by the temporal fossae, and that the forehead has a low rounded mesial prominence between the horn-bases.

Sheep. The remains of sheep are scanty and consist of a few fragmentary limb-bones and teeth. The bones are of slender build like the Early Iron Age and the Romano-British variety. An imperfect metatarsal from one of the sections shows the remarkable constriction of the shaft immediately above the distal articulation as shown in fig. 16 of pl. 143, in Pitt-Rivers' *Excavations in Cranborne Chase*, vol. ii.

Goat. Undoubted remains of goat occur among the material from three of the sections, as follows:—a horn-core from D III. C IV. 3, fragments of two horn-cores from D III. C IV. 4, and a broken metacarpal from D IV. C III. 6. Some of the other broken bones may be either sheep or goat.

Pig. Scanty remains of pig occur in the material from seventeen of the spits excavated. They comprise broken limb-bones, loose teeth, and fragmentary jaws with teeth in position. They are too imperfect for the identification of breed, but agree generally with similar remains from other places. Two very large canines from D III. C VIII. 3, and one from a mixed collection D III. C II. 5, 6, 7 and D III. C VI. 3, 4, suggest the presence of wild boar.

Dog. A small fragment of the lower jaw with teeth from D III. C VII. 3 belongs to dog, but is too imperfect for the identification of the breed.

REPORT ON THE MOLLUSCA

By A. S. KENNARD, A.L.S., F.G.S.

A. Non-MARINE

From the material submitted twenty-one species were determined, viz.:

<i>Pomatias elegans</i> (Müll.)	Common
<i>Carychium minimum</i> (Müll.)	"
<i>Pupilla muscorum</i> (Linn.)	"
<i>Acanthinula aculeata</i> (Müll.)	Rare
<i>Vallonia excentrica</i> (Sterki)	"
<i>Vallonia costata</i> (Müll.)	"
<i>Cochlicopa lubrica</i> (Müll.)	"
<i>Goniodiscus rotundatus</i> (Müll.)	"
<i>Arion</i> sp.	"

<i>Helicella cellaria</i> (Müll.)	Rare
<i>Helicella nitidula</i> (Drap.)	"
<i>Helicella radiatula</i> (Ald.)	"
<i>Vitrea crystallina</i> (Müll.)	"
<i>Xerophila itala</i> (Linn.)	"
<i>Trochulus hispidus</i> (Linn.)	"
<i>Trochulus striolatus</i> (Pfr.)	"
<i>Arianta arbustorum</i> (Linn.)	Common
<i>Cepaea nemoralis</i> (Linn.)	"
<i>Cepaea hortensis</i> (Müll.)	"
<i>Clausilia rugosa</i> (Drap.)	Rare
<i>Marpessa laminata</i> (Mont.)	"

These shells are of the same age as the occupation of the Camp. It is obvious that the ecological conditions were very different from those of the present day when this faunule flourished on the Downs at Whitehawk Camp. The examples are all well developed, and many of *Arianta arbustorum* and *Cepaea nemoralis* are extremely large. Practically all these forms require damp and shade, and these conditions must have existed at that time. The rainfall must have been much heavier and the water table of the chalk much higher. The faunule is that of damp woodland or scrub, and these conditions must have existed on the Downs when the Camp was occupied. In a previous report I stated that 'It would be of great interest if we could date when this damp period ended' (*Sussex Arch. Coll.* lxxi, p. 85). We now know that in Wiltshire it had practically ended in the Middle Bronze period.

B. MARINE

Six species of marine shells were represented, viz.:

<i>Patella vulgata</i> (Linn.)	1 example
<i>Buccinum undatum</i> (Linn.)	2 examples
<i>Cardium edule</i> (Linn.)	1 valve
<i>Paphia decussata</i> (Linn.)	2 valves
<i>Mytilus edulis</i> (Linn.)	Common
<i>Ostrea edulis</i> (Linn.)	1 valve

From the paucity of marine shells it is clear that this was not an important food supply for the inhabitants. Possibly they partook occasionally of the mussel (*Mytilus edulis*, Linn.), but the remainder may well have been taken to the Camp for other purposes, for they are nearly all 'dead' shells.

THE CHARCOAL

The following woods have been identified by Mr. J. Cecil Maby, B.Sc.:

<i>Carpinus sp.</i> , Hornbeam (mature wood)
<i>Corylus sp.</i> , Hazel (mature wood)
? <i>Fraxinus sp.</i> , Ash (knotty wood)
<i>Prunus sp.</i> , Apple, Plum, etc. (knotty and crumbly)
<i>Quercus sp.</i> , Common Oak (mature wood)
<i>Taxus baccata</i> , Yew

Though this list only contains six trees as against fourteen in the 1929 report, yet it includes two new ones, viz., Hornbeam and Yew, bringing the total of woods identified here to sixteen. There is therefore plenty of material for the woodland or scrub postulated by Mr. Kennard from the land-snails. At the present time Yew is not found growing on the Downs anywhere near Brighton, except in Stanmer Park—indeed, with this exception, it would be difficult to find a single specimen between the River Arun and Beachy Head. West of the Arun, however, Yew grows wild in abundance on the Downs, attaining its greatest concentration in Kingley Vale and on Bow Hill, where dense woods of considerable extent are composed solely or mainly of Yew, some trees being of immense girth and age.

The present treelessness of the eastern Downs is no doubt largely due to the proximity of the sea which is not more than a mile from Whitehawk Camp. If woodland or scrub existed here in neolithic times it argues that the sea must then have been at least some miles distant, as it is to-day in the case of the more wooded western Downs.

THE CHALK OBJECTS

The following objects of chalk were found :

Fig. 86. Fragment of chalk cup from D III. C II. 7, closely similar to a fragment found at The Trundle (*Sussex Arch. Coll.* lxx, p. 62, fig. 177). The interior is covered with scorings made by a sharp flint, by which means it has been hollowed out.

Figs. 87, 88. Two small pendants of chalk, each perforated eccentrically. For details of size and shape see drawings. Their weight is very slightly over 2 and $2\frac{1}{2}$ oz. respectively. They were both found immediately beneath Skeleton II, which was lying semi-prone, and may therefore have been used as ornaments. The perforations are worn smooth all round, and not only on one side.

The following were also found, but are not illustrated :

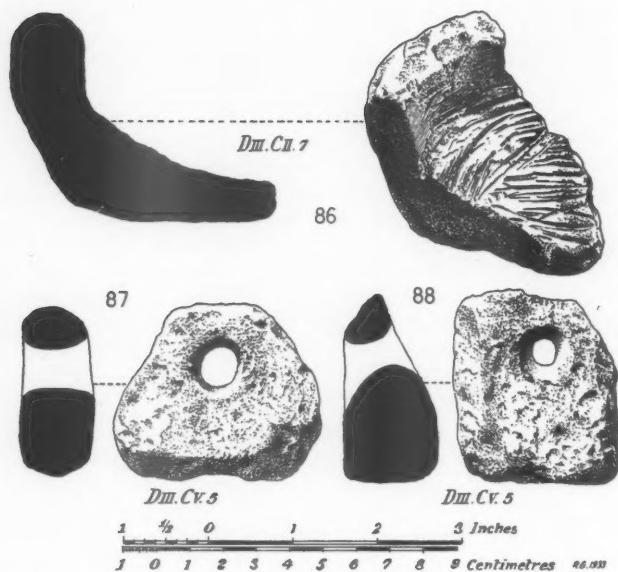
Two pieces broken through perforations, probably weights ; from D III. C v. 6 and 7.

A large, heavy block, with an attempted perforation near one end. This was one of the stones surrounding Skeleton II in D III. C v. 5. A similar, but completely perforated block, weighing 32 lb., was found in the 1929 excavations (*Sussex Arch. Coll.* lxxi, p. 80).

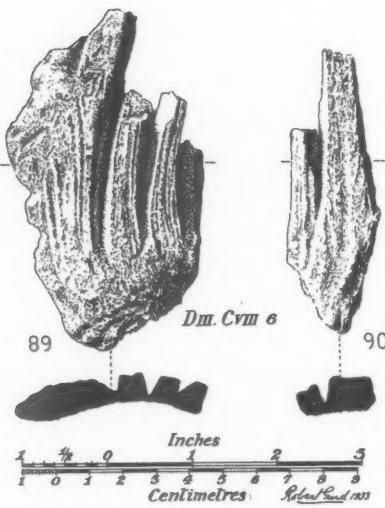
Another large block broken through its perforation, from the same grave.

GRAIN-RUBBER

A large piece of a lower stone of a grain-rubber of sarsen came from D III. C v. 3. Pieces have been broken off from the sides all round, but its present length is $12\frac{1}{2}$ in. ; breadth, 9 in. ; and thickness, 7 in. It is part of a boulder, the grinding surface being rubbed smooth by use and not dressed.



Figs. 86-8. Chalk Objects



Figs. 89, 90. Fragments of Antler Comb

WHITEHAWK NEOLITHIC CAMP, BRIGHTON 133

In concluding I desire to express my deep appreciation of the ready help and co-operation given by every one concerned, and particularly to the following: to Mr. Henry D. Roberts, M.B.E., Director of the Museum, Library, and Art Gallery, for giving me every possible facility and for putting at my disposal a room at the Museum and the services of the staff; to Messrs. H. S. Toms and A. F. Ring for much help in washing, marking, and classifying the finds; to Mr. B. C. Hamilton for much hard work of all kinds, including surveying; to Messrs. G. P. Burstow, G. Holleyman, and James Stuart for assistance in digging; and to Dr. J. Grahame Clark, F.S.A., Dr. J. Wilfrid Jackson, F.G.S., Mr. A. S. Kennard, A.L.S., F.G.S., Mr. J. Cecil Maby, B.Sc., Mr. Stuart Piggott, and Miss M. L. Tildesley, for their kindness in examining and reporting on the various classes of finds upon which they are experts.

The objects found are exhibited in the Brighton Museum.

A Late Mesolithic Settlement Site at Selmeston, Sussex

By J. G. D. CLARK, M.A., Ph.D., F.S.A.

[Read 14th December 1933]

FLINT implements were first discovered in the working of the sand-pit immediately to the east of Selmeston church almost mid-way between Lewes and Polegate, Sussex, by Mr. W. J. Parsons, who at that time was resident in the neighbouring village of Alciston. The news soon reached the ears of Dr. E. Curwen, F.S.A., who arranged to secure the flints as they were recovered. Towards this he enlisted the aid of Mr. H. A. Davies of Selmeston, who has not only maintained a vigilant watch over the pit, but has also been of great assistance in various ways during further investigations on the site. The present author noticed the few specimens then in Dr. Curwen's collection in his *Mesolithic Age in Britain*, pp. 83 and 84. When on first visiting the site with Dr. Curwen the section of what appeared to be a pit-dwelling was discovered, it became clear that excavation would greatly enhance our knowledge of the site. Accordingly, with the generous permission of Dr. Curwen and the kind assistance of Mr. Parsons, the pit (pit 1) of which we had seen the first indications, and the remains of another (pit 2), were excavated early in the month of June 1933. Subsequently, another pit-dwelling (pit 3) becoming apparent during the normal course of working back the section of the sand-pit, the author undertook further excavations in the autumn, when he was assisted by Mr. Davies. We should like to acknowledge the kindness of Messrs. Osborn & Bennet of Eastbourne for allowing us to excavate in the sand-pit. Finally the report is made more valuable by identifications by Messrs. Christopher Hawkes, F.S.A., and J. C. Maby, B.Sc.

The position of the sand-pit in relation to Selmeston church is shown by fig. 1. The area of the pit to the north of the track leading to Green House was exploited many years ago and is now overgrown. The next area to be worked was that immediately to the south, while at the present time the bay to the south-east is being enlarged. The site lies on the Lower Greensand belt which together with the Gault and the Upper Greensand runs along the northern edge of the South Downs.¹ Lying

¹ See *The Mesolithic Age in Britain*, map II.

A LATE MESOLITHIC SETTLEMENT SITE 135

well over the 100-ft. contour the site forms part of a low eminence from which views can be obtained, when there are no leaves on the trees, in all directions. To the south it commands a good view up the valley of the Cuckmere which divides the Seaford from the Eastbourne Downs. Water was probably

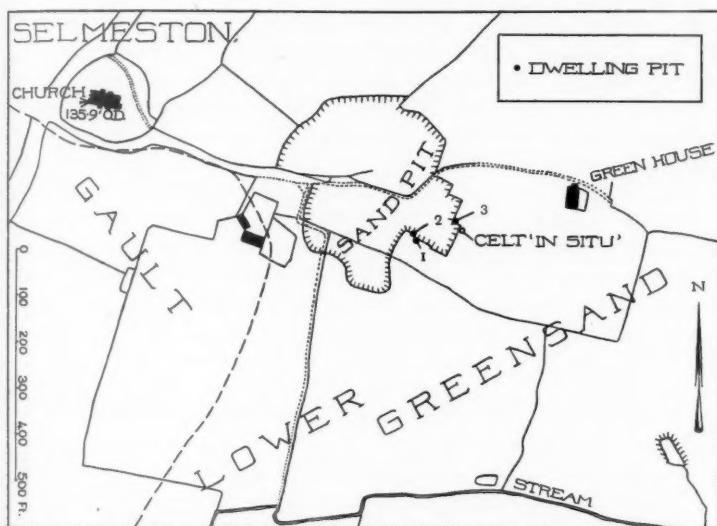


FIG. 1. Map showing position of the site in relation to Selmeston church

easily obtainable, as at the present day spring water frequently flows down the village street of Selmeston, while immediately to the south of the site is a small brook flowing eastwards to the Cuckmere.

The sand-pit is being exploited primarily for the clean building sand which composes the greater part of the exposed section. Above this sand is a layer of darkish top-soil with a considerable humus content, which is sold as garden soil. The pit-dwellings 1 and 3 were excavated into the clean and otherwise undisturbed Lower Greensand to a depth of 3 ft. 9 in. and 3 ft. 6 in. respectively, the infilling in both cases betraying itself by differences of colour and constitution. In colour the infilling sand was whitish and in patches pinkish in contrast with the orange colour of the undisturbed sand, a phenomenon possibly to be explained by the fact that the former had been in contact with

fire, traces of which were furnished by the numerous calcined flints found in the pits as well as by the presence of charcoal. In constitution the infilling of the pits differed from the undisturbed Lower Greensand in that it included quantities of extraneous material—burnt flints, worked flints, and charcoal—and further in that it was markedly looser.

Pit 1. The pit was revealed by a section which proved to intersect it diagonally. It was overlain by 4 ft. of top-soil darker in colour than the pure sand and evidently having a considerable humus content. In order to discover exactly how objects were distributed in the section and in order to make sure of recovering the plan of the pit as accurately as possible, the soil was removed spit by spit from the turf down to the bottom of the pit-dwelling. The top five spits were removed over a rectangle 11 ft. deep and 15 ft. wide, to depths of 9, 11, 11, 14, and 9 in. respectively. The base of spit V marked the transition from the humus layer to the pit infilling. The outline of the pit-dwelling was found to be quite clear owing to the difference in colour and constitution of the infilling at the base of spit VI. From spit VI to spit X inclusive the area of the excavation, accommodating itself to the diminishing size of the pit, became smaller and smaller, while the depths of the spits were as follows : 9, 7, 6, 6, and 0-9 in. respectively. In plan the pit-dwelling proved to be oval, with maximum diameters of about 15 ft. \times 8 ft. (fig. 2 A), while in section the sides were fairly steep, the maximum depth being 3 $\frac{3}{4}$ ft. (fig. 2 B).

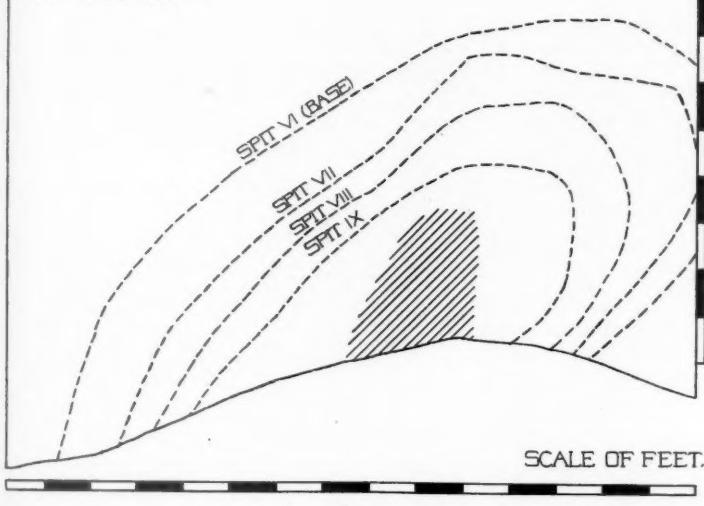
Worked and calcined flints were found abundantly throughout the section (see appendixes I and II) the actual density for each spit from the top to the bottom expressed in hundreds being : 3, 3, 2, 13, 16, 11, 7, 5, 3, and 3. To obtain an idea of the relative density of flints in each spit it is necessary to make corrections for the variations in the depths of the spits and above all their great and progressive decrease in area.¹ Taking spit I as standard and making the necessary checks we obtain the following figures : 3, 2, 2, 8, 16, 25, 36, 37, and 32, the figure for the last spit being uncertain, but estimated to be over 40. It can be seen, therefore, that relatively the concentration of flints occurs within the pit-dwelling. The occurrence of flints, including a few microliths, in the top-soil right up to the modern surface is due to the fact that the top-soil has evidently been intensively cultivated, chalk fragments presumably introduced for agricultural purposes having been noted well down to 3 ft. The following table details the objects other than flints noted from

¹ This has been done accurately enough by using squared paper.

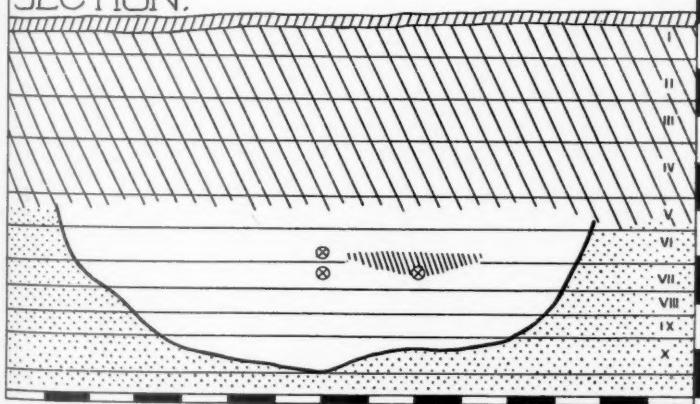
PLAN

-----CONTOURS OF PIT.

HEARTH.



SECTION.



FIGS. 2 A and 2 B. Plan and section of pit I.

the top-soil overlying pit I, and kindly identified by Mr. Christopher Hawkes, F.S.A. :

- Spit I. 8 Medieval sherds.
- II. 5 " "
- III. 12 " "
- IV. 1 Late Bronze Age sherd, 3 Early Iron Age sherds, 1 Romano-British sherd, and 27 Medieval sherds.
- V. 1 Beaker sherd (fig. 3, no. 1), 1 Early Iron Age sherd, 5 Medieval sherds, and an iron handle and fragment of sheet bronze, both probably of Romano-British date.

It will be noted that a few medieval sherds are found right down to the base of the top-soil.

It was noticed that many of the flints from the top-soil showed a lustrous surface absent on those from the infilling of the pit. Typologically the flints from the pit infilling appear to belong to one industry only, but five flints from the top-soil belong to a later culture. These include a 'fabricator' and a scraper with shallow secondary work from spit IV, and the tip of a flake with fine secondary flaking done by pressure and a 'fabricator' from spit V. The flints which appear to be primary to the pit-dwelling are discussed farther on in this paper and are illustrated by figs. 4-6. The exact provenances of all illustrated specimens are given in Appendix II.

Though traces of fire were very abundant in the base of the pit in the shape of calcined flints and small ill-preserved fragments of charcoal, the only definite hearth was discovered well up in the infilling in such a position as to suggest that it was secondary to the occupation of the pit-dwelling.¹ Associated with this secondary hearth were eight fragments of typical Peterborough pottery of which five bear traces of 'maggot'

¹ The hearth, occurring as it did in the base of spit VI and in the top of spit VII, was situated below the rim of the pit-dwelling, as shown by the section, although in the excavation it was only possible to establish in plan the outline of the pit with certainty at the base of spit VI. The oblique hachuring in fig. 2B should in fact probably be extended down into spit VI. Moreover it is exceedingly unlikely that a pit-dwelling, even in Lower Greensand would silt up to a horizontal level at once. It is indeed more likely that a shallow concavity would for some time remain in the middle of the pit. We incline to the view that the hearth was set in such a concavity after the pit-dwelling had silted up to this extent. In regard to the silting it should be recalled that the undisturbed Lower Greensand is quite firm, as indeed the steep sides of pit 1 seen in fig. 2B suggest, and must not be confused with wind-blown dune sand. Had the pit been sunk into chalk the interpretation would have been simplified by the presence of silt-ing lines. In this case, however, we must rely on the probabilities of the case, recalling the important fact that the basal levels of pit 1 and the infillings of pits 2 and 3 were entirely free from later admixture.

A LATE MESOLITHIC SETTLEMENT SITE 139

decoration. These sherds drawn by Mr. Gurd are illustrated on fig. 3:

No. 2. A body fragment $\frac{3}{8}$ in. thick, the paste containing large

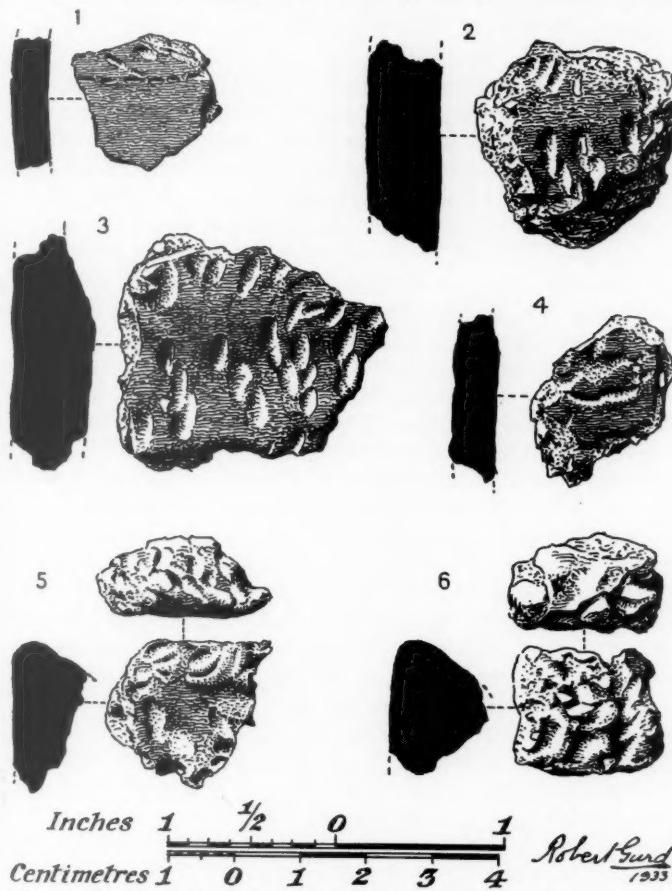


FIG. 3. No. 1. Beaker sherd from top-soil over pit 1. Nos. 2-6. Peterborough sherds from secondary hearth, pit 1

fragments of calcined flint, the colour dark brown, decorated by a row of straight twisted cord impressions arranged diagonally.

No. 3. A body fragment $\frac{1}{2}$ in. thick, the paste containing large fragments of calcined flint, the colour black outside and pink on the inner face, decorated by straight impressions of a stout twisted cord arranged diagonally in two opposed rows.

No. 4. A fragment showing a trace of cord impressions.

No. 5. A rim fragment, similar in paste and colour to no. 2, and likewise decorated by diagonally impressed cords.

No. 6. A more complete rim fragment, brownish and pinkish in colour, decorated across the top by transverse and slightly concave 'maggot' impressions and immediately below the flattened rim by diagonal impressions.

The charcoals from the secondary hearth were submitted to Mr. J. C. Maby, B.Sc., who reports that out of the thirty-two pieces examined no other species than oak (*Quercus robur* or *Q. sessiliflora*) were observed. All the samples were from good-sized timber, six or seven pieces of which were probably, though not certainly, implicated. Mr. Maby also examined three charcoals from spit VII which he identified as almost certainly *Corylus avellana* (Hazel). Fragments of hazel-nut shells, which have been seen by Dr. Godwin and Mr. Maby, were obtained from spits VII and IX.

From the pit-infilling only one fragment of bone was recovered (spit VIII), and this was too far decayed to be identifiable.

Pit 2. What proved to be the last remains of a pit-dwelling was investigated in my absence by Mr. Parsons. The bottom of the pit was 8 ft. below present ground surface. From the basal 2 ft. Mr. Parsons obtained sixty-seven fragments of flint, including fourteen calcined pieces (see Appendix I). Among the flints were two microliths (fig. 9, nos. 139, 140).

Pit 3. In the case of pit 3 the top-soil, which was here slightly less than 3 ft. thick, was removed without examination. The pit was excavated in five spits, nos. I-III each being $4\frac{1}{2}$ in. in depth, no. IV $5\frac{1}{2}$ in., and no. V from 0 to 17 in. The form of the pit was not so easy to establish as in the case of no. 1, and it was not until spit IV had been removed that it was possible with certainty to establish it; at this stage the pit was about $4\frac{1}{2}$ ft. by 5 ft. across. Apart from one medieval and one Early Iron Age sherd, both from the base of the top-soil, no objects extraneous to the Mesolithic infilling of the pit were found. Calcined flints were again common (298), and over 1,200 worked flints, some of them with signs of fire, were also obtained. The more important flints from pit 3 are illustrated by figs. 7-8; further reference will be found in the general description of the Mesolithic industry. The charcoal samples have been identified by Mr. Maby as follows:

	Hazel.	Oak.	Hawthorn.
From spit III	4	2	—
" " IV	3	—	1
" " V	1	—	—
From spit IV a fragmentary hazel-nut shell was obtained.			

Other finds. In removing top-soil one morning just before my arrival at the sand-pit, Bois, employed in digging the sand, came upon a broken flint celt with expanded cutting-edge. The position of this find is indicated on the map (fig. 1). The top-soil at this point was between 2 ft. 6 in. and 2 ft. 9 in. deep. The axe was struck at about 2 ft. 3 in. and must therefore have rested in the base of the top-soil. It is carefully flaked and the cutting-edge has been produced by fanwise flaking. During the working of the sand-pit great quantities of worked flints have come to light and there is little doubt that numerous pit-dwellings have been so destroyed.¹ The great bulk of the flints clearly belong to the Mesolithic industry found in the excavated pits and will be considered with them under another heading. Some of the most interesting loose finds are illustrated on figs. 9-11. A few stray finds, however, belong, like the axe found by Bois and the five specimens from top-soil over pit 1, to later periods. These include four 'fabricators', the butt of a chipped and polished flint celt, two examples of the derivative form 'D' of the *petit tranchet*, and a gun-flint. In addition, six fragments of pottery identified by Mr. Hawkes as Late Bronze Age and similar to a fragment from the top-soil over pit 1, a bronze nail (Roman), and great quantities of medieval pottery were found loose in the sand-pit.

THE MESOLITHIC INDUSTRY

We shall next consider the Mesolithic flint industry as a whole, referring to individual pieces by the numbers on figs. 4-11.

Preservation. As mentioned earlier, flints from the top-soil tended to be glossy and smooth, but those from the pit-infillings are quite fresh. A large number, nearly a fifth, show the influence of fire. It is probable that flints from the sea-shore provided part of the raw material for the Mesolithic flint-knappers of Selmeston, as two flakes with the cortex of beach pebbles came from spit VI of pit 1 and another fragment from spit V. It is possible, though statistically very unlikely, that these three pieces belong to the period of the secondary hearth, as did a few flints from this level. If, as is more probable, they go with the Mesolithic industry their geographical implications are of interest. Sea-beach flint pebbles were used as raw material at the Mesolithic site at Seaford.²

¹ Messrs. Parsons and Davies agree that flints were to be found commonly only in very limited areas, being concentrated locally. This supports the view that many pit-dwellings have perished.

² Clark, *Man*, 1930, no. 2.

TYPOLOGY

Cores. Cores were found very abundantly both in the infilling of the pit-dwellings and loose in the sand-pit. The commonest forms are conical with one platform (no. 135) or oblong with two platforms (no. 137), though many varieties are found. Almost every core found shows the narrow and often regular flake scars that betoken microlithic flint-working.

Core-dressings. In flaking down cores and obtaining new platforms from which to remove the fine flakes required, numerous 'core-dressings' were produced, including flakes with either the apex or part of the striking platform of the core at one end, slices struck off the base of the core, and triangular-sectioned flakes struck off the edges of striking platforms (nos. 91, 130).

Untouched primary flakes. Primary flakes, with no perceptible signs of use and no indications of secondary flaking, occurred in thousands, both in the pit-dwellings and loose. Their general appearance is characteristic of a microlithic industry.

Pointed flakes with bulbs. Several primary flakes were found blunted obliquely in microlithic technique across the extremity opposite the bulb of percussion, which is retained. It is because they retain their bulbs that we distinguish them from true microliths. Thirty-five specimens were found loose and twelve from the top-soil over pit 1 (nos. 76, 77, 79-82, 86, 87), but that they belong to the Mesolithic industry is proved by the occurrence of six specimens from the infilling of pit 1 (nos. 75-8, 84, 85) and of three from pit 3 (no. 132). Cf. Horsham (nos. 78-83 in *Arch. Journ.*, xc).

Microliths. The microliths have been classified along the lines laid down in *Arch. Journ.*, xc, 52. In Appendix III of the present paper each of the illustrated microliths is classified with cross-reference to the figures. In the table on the opposite page we summarize this classification by tabulating the microliths in their main groups only.

The table illustrates very clearly the general composition of the microlithic element of the Selmeston industry, and as in the final column the proportions of the main classes are expressed as percentages of the whole, there is nothing that can be added by words. The finer points of the typology may be discovered by consulting figs. 4, 7, and 9 in conjunction with Appendix III of the present paper and, if necessary, with the full table of classification published in *Arch. Journ.*, xc. Particular attention must, however, be drawn to details especially relevant to dating and correlating the industry. Perhaps the most sig-

nificant piece for dating purposes is the trapeze, of which one specimen (no. 47) occurred in spit VIII of pit 1, since this form is regarded over a great part of Europe as indicative of the later half of the Mesolithic period. Of almost equal interest are the trapezoids (nos. 44, 45, 174 A) which are characteristic in this country of the developed Tardenoisian. From the point of view of cultural correlation the hollow-based (nos. 50-3, 108, 176-8) and tanged (nos. 54, 55) points are especially interesting. It will be noted that they occur commonly enough to be of importance, though they do not occur in anything like the same proportion as in the Horsham industries. A feature of significance is that two only of the eight specimens (nos. 177, 178) of the hollow-based point are of the asymmetric and theoretically more evolved form.

TABLE CLASSIFYING MICROLITHS IN MAIN GROUPS

	Class	Pit 1	Pit 2	Pit 3	Total 1-3	Loose	Total	Per Cent.
Blunted down part of one edge.	'A'	24	2	6	32	40	72	53
Blunted down the whole of one edge.	'B'	8	—	1	9	4	13	9½
Blunted down one edge and across base.	'C'	2	—	—	2	11	13	9
Triangles . . .	'D 1'	1	—	2	3	8	11	8
Other geometric forms	'D 2-8'	8	—	1	9	6	15	11
With inverse retouch at base.	'E'	1	—	—	1	1	2	1½
With concave base .	'F'	4	—	1	5	3	8	6
Tanged . . .	'G'	2	—	—	2	—	2	1½
<i>Total</i>		50	2	11	63	73	136	

It may be noted that in addition to the microliths classified in the tables numerous broken specimens were excavated, of which pit 1 yielded fifty-nine and pit 3 eight specimens. A feature to be noted is that, regarding the microliths as they have been classified and drawn, i.e. with the pressure rings on the primary flake surface open to the top, 93·4 per cent. were blunted on the left edge.

Blunted-back points. In order to draw attention to their size we have withdrawn from the heading and table of 'microliths' all points exceeding 2½ in. in length (e.g. nos. 179-83). The distinction is purely one of convenience, as, not only is there no difference in kind, but even in the question of size the line has been arbitrarily drawn. Thus several of the microliths are over 2 in. in length and one from pit 3 is 2·34 in. long (no. 119).

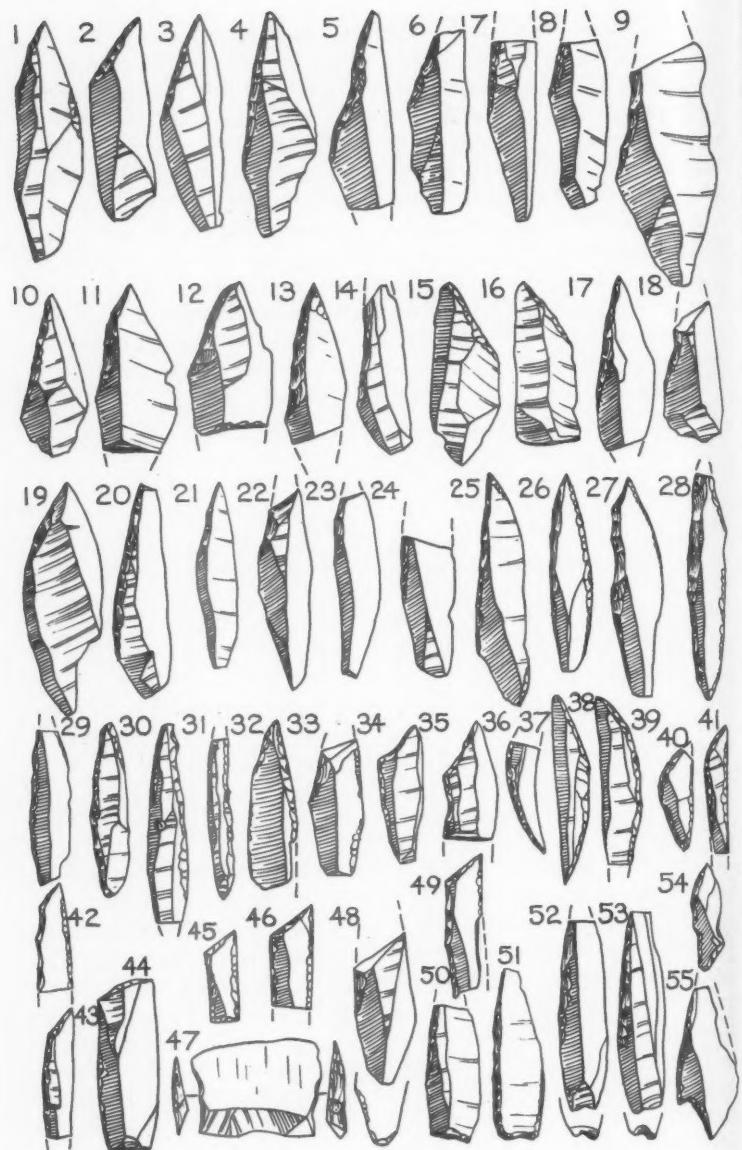


FIG. 4. Microliths from pit 1 ($\frac{1}{2}$)

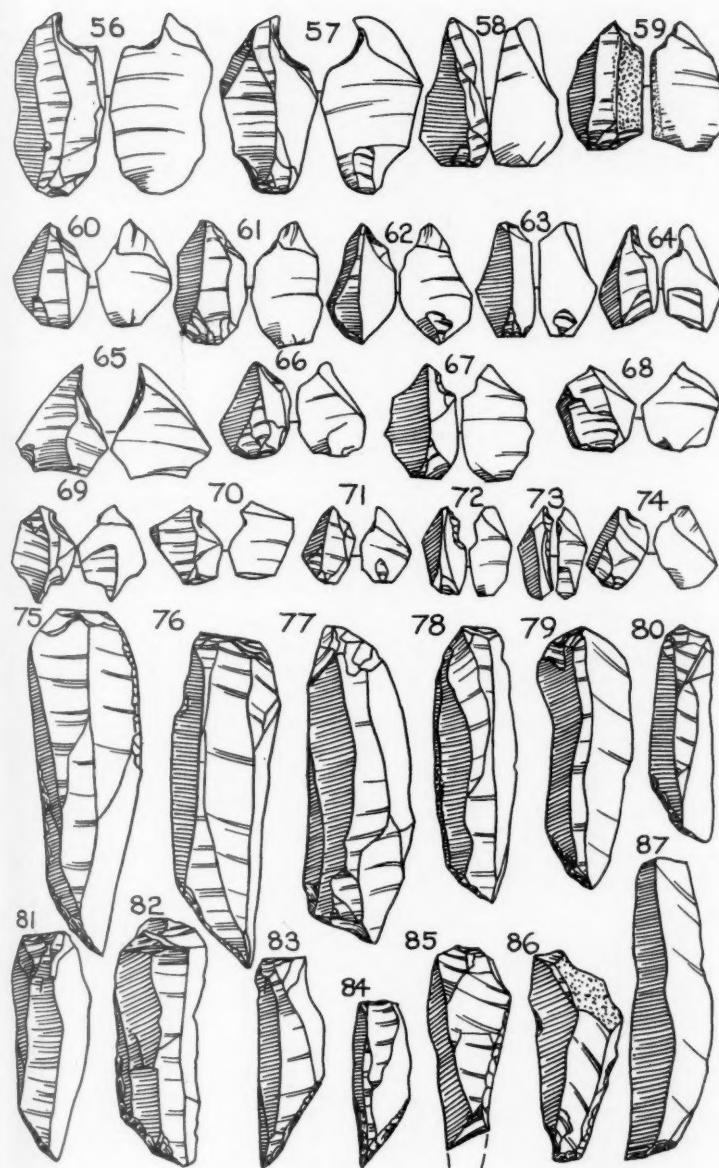


FIG. 5. 'Micro-burins' and pointed flakes with bulbs from pit 1 ($\frac{1}{4}$)

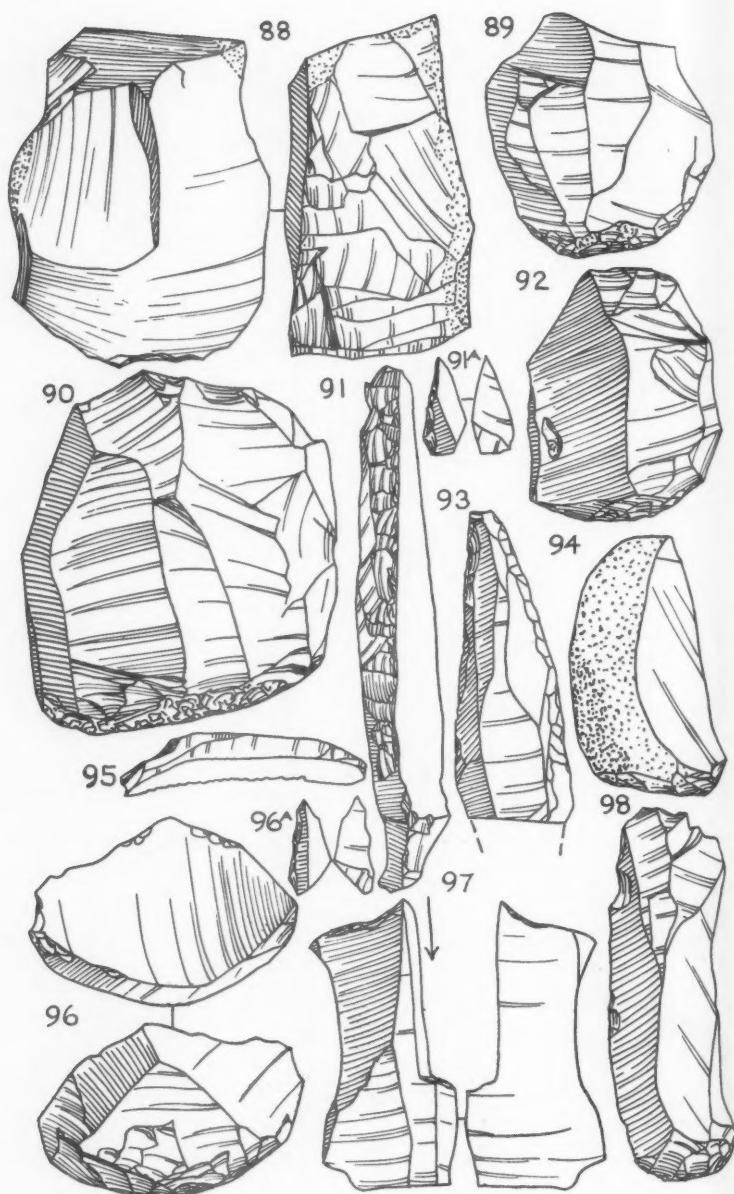


FIG. 6. Flints from pit 1 (1/2)

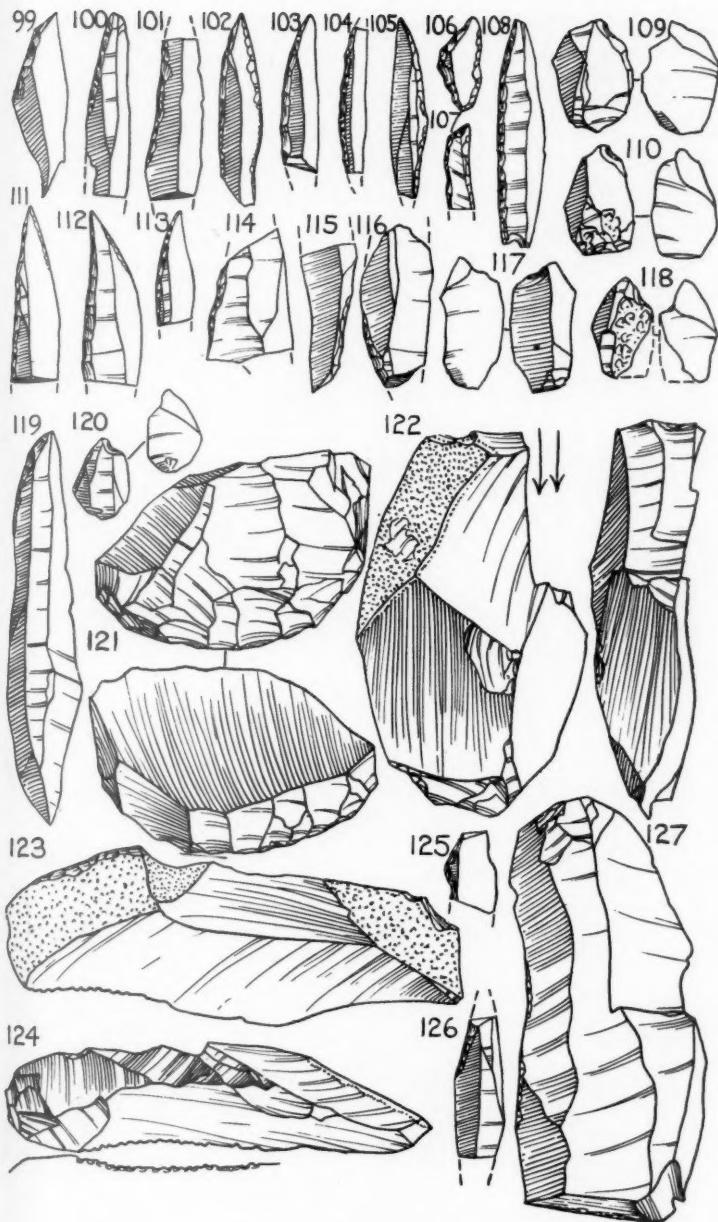


FIG. 7. Flints from pit 3 (1)

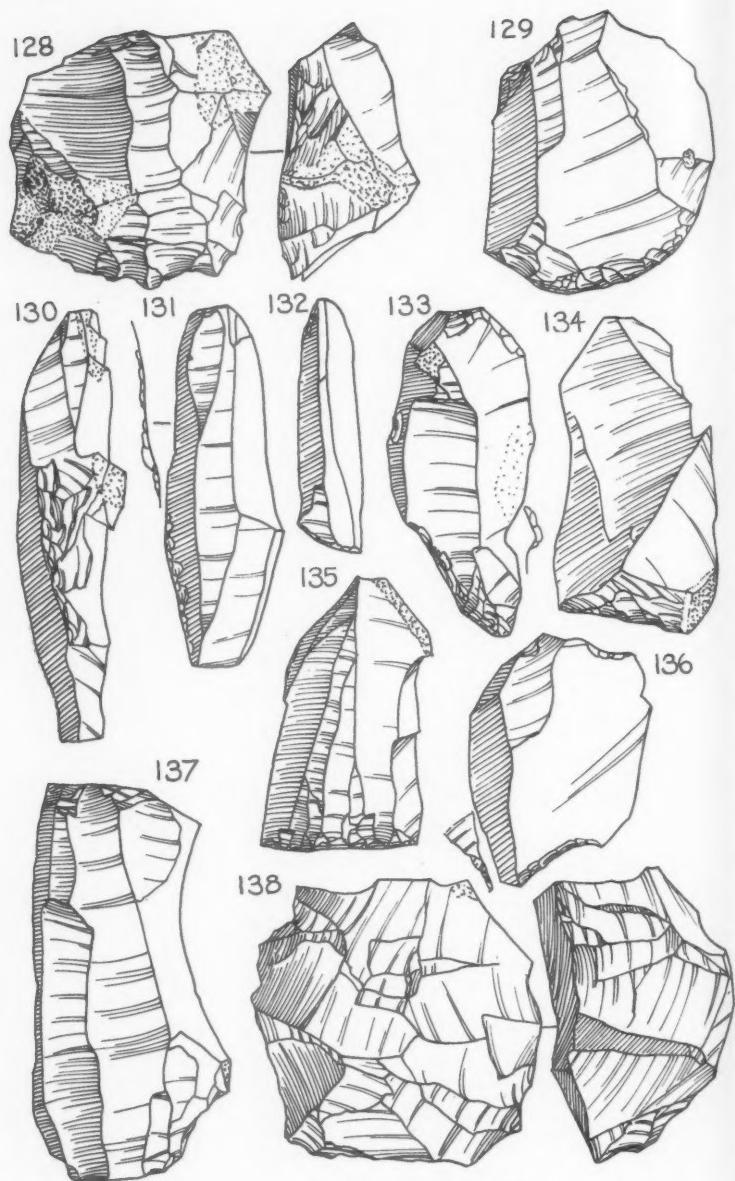


FIG. 8. Flints from pit 3 (1)

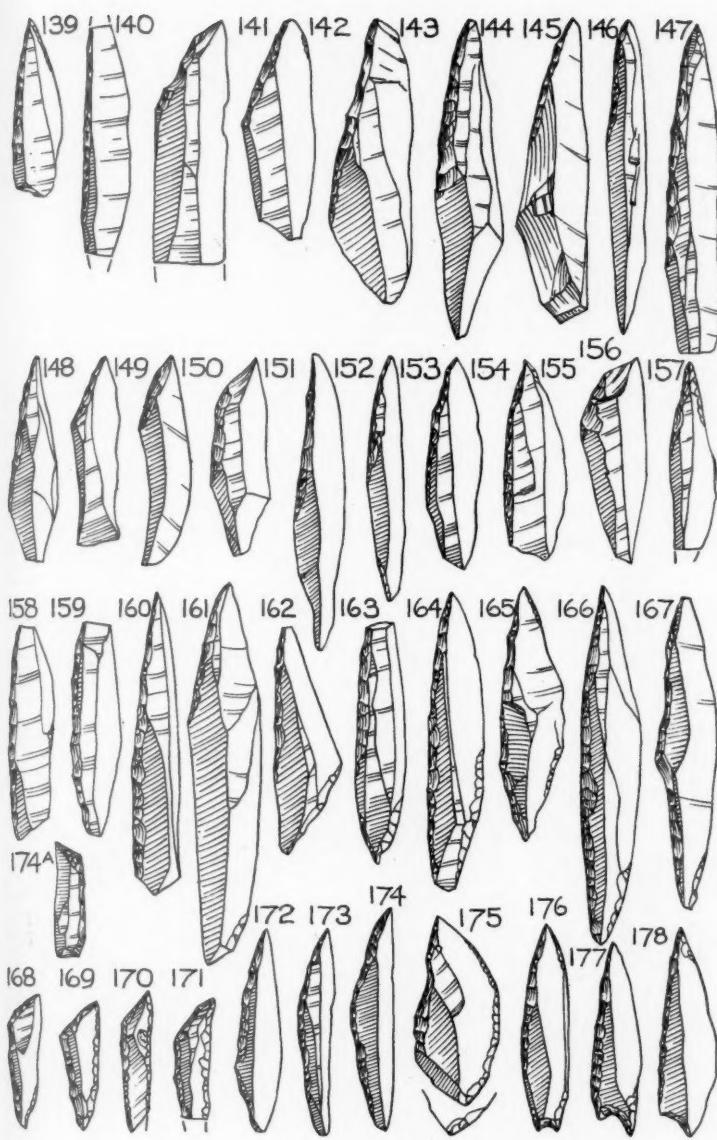


FIG. 9. Selection of microliths found loose in the sand-pit (1)

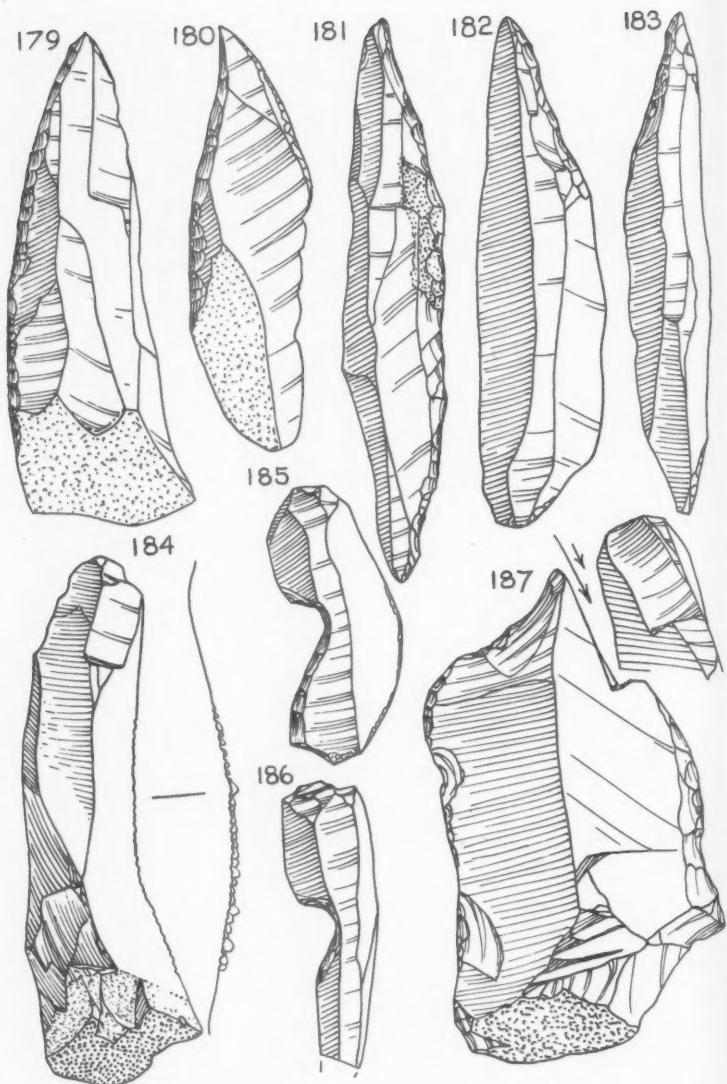
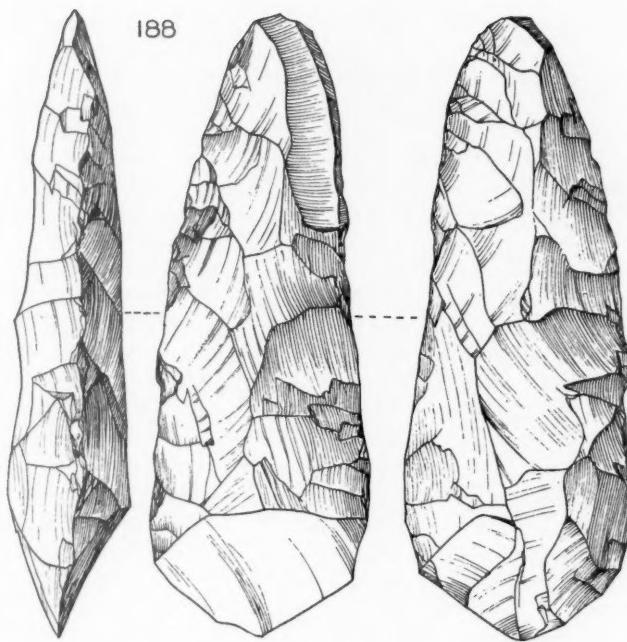


FIG. 10. Flints found loose in the sand-pit (1)

188



189

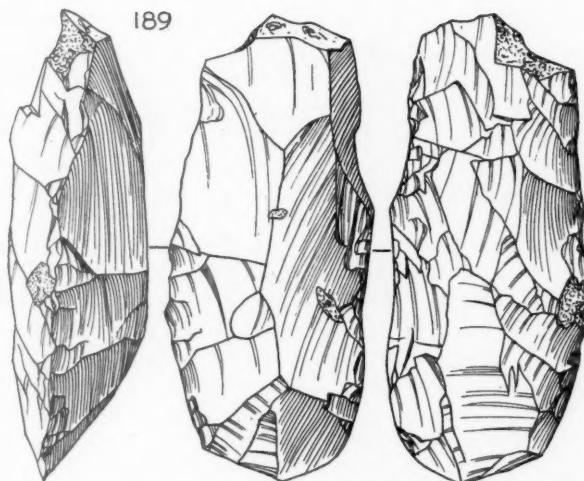


FIG. 11. Chipped axes found loose in the sand-pit ($\frac{2}{3}$)

'Micro-burins'. Pit 1 yielded nineteen 'micro-burins', all with the notch on the right, and pit 3 five, of which four had the notch on the right and one on the left, the 'micro-burins' being regarded with the bulbs of percussion lowermost according to conventional usage. Some 95·7 per cent. of the 'micro-burins' were, therefore, notched on the right, a figure which compares well with the 93·4 per cent. of the microliths blunted on the left, as we should expect if the connexion between the two forms is as close as we think it to be. All the 'micro-burins' so far recorded consist of the butt-ends of primary flakes. Pit 1 also yielded two examples (nos. 91 A and 96 A) of what may conceivably result from fractures of microliths.¹

Asymmetrically notched flakes. Several flakes with an asymmetric notch have been recovered which seem to represent an intermediate stage in the manufacture of microliths and incidentally of 'micro-burins'. No. 186 seems to represent a microlith of the simple obliquely blunted form ('A') as yet unseparated from the butt-end of its primary flake, an encumbrance more easily removed by a single oblique blow in the notch than by a process of chipping that would in any case jeopardize the point of a microlith. The butt-end of the primary flake, when removed by a single blow in the way suggested, would become the familiar 'micro-burin'. A further advantage of this method of removing the bulbar end of the primary flake must have been that in manufacturing more complex forms of microlith it would have been useful to retain the butt as a 'handle' until the last moment. No. 185 shows a typical hollow-based point ('F') at a stage immediately previous to the removal of the butt. Unpublished examples from other sites include triangles in the same stage.

Burins. Three typical burins were found, each of which is illustrated. No. 97, a typical concave oblique angle-burin, came from the base (spit IX) of pit 1. No. 122, a single-blow burin, came from spit I of pit 3. No. 187, a concave oblique angle-burin, was found loose. The burins call for no remark as they are normally to be found in industries of this period when sought.

Saws. Thirty-one flakes finely serrated from one face only were found. Of these, twenty-one, including no. 184, were found loose. That they are typical of the Mesolithic industry of Selmeton is, however, shown by their occurrence in the pits (nos. 93, 95, 123, 124). A thin band of lustre has been noted on three of the specimens found loose. In some cases the unserrated edge of these flakes has been blunted in certain places,

¹ Classified in *Arch. Journ.*, xc, as class 'B' of the 'micro-burin' form.

presumably for the finger (e.g. nos. 93 and 123). Such serrated flakes have been recorded from other Mesolithic sites, such as Peacehaven, Kelling, and West Heath, but in each case from surface sites where their contemporaneity could not be proved. The Selmeton evidence shows decisively that the serrated flake dates back to our Mesolithic. The Hassocks pit also yielded serrated flakes.

Convex scrapers. The specimens from the infillings of the Mesolithic pits show no features that call for special comment. We illustrate typical specimens of the horseshoe form (nos. 89 and 92 from pit 1, and no. 129 from pit 3), and of the end form (nos. 94 and 98 from pit 1). One end-scraper (no. 133, accidentally illustrated the wrong way up) appears to have a carefully worked tang, possibly for hafting to a handle. Heavy types of scraper made from very thick flakes are represented by nos. 88 and 128 from pits 1 and 3 respectively.

Square-ended scraper. One specimen (no. 134) came from pit 3.

Concave scraper. We illustrate the only excavated specimen, which seems to be rare in this industry, from pit 3 (no. 136).

Awls. No examples have been found. They are normally absent or rare in Mesolithic industries in this country.

Hammerstone. A good example of a core utilized as a hammer-stone (no. 90) came from pit 1.

Axes. No axes were found in the pit-dwellings excavated, but the discovery of a typical sharpening flake in the base of pit 3 shows that they formed an integral part of the Selmeton Mesolithic industry. Three complete examples and fragments of four others have been recovered loose. We illustrate two specimens, one with a roughly pointed butt (no. 188) and the other with a broad butt (no. 189). Both examples show cutting-edges formed by the intersection of a few flake scars. The transverse flake scar is particularly well exemplified on no. 188, which has not improbably been resharpened. The Selmeton axes are typologically considerably more advanced than those from the Early Mesolithic site of Broxbourne. No. 188 in particular is quite celtiform.

Axe-sharpening flakes. Four typical specimens were found loose, one (no. 96) came from the top-soil over pit 1, and a sixth (no. 121) came from the basal spit of pit 3. This latter is very important, as it proves that axes formed part of the equipment of the users of the Mesolithic pits.

SUMMARY AND CONCLUSIONS

Perhaps the most interesting feature of the Selmeston site is the presence of a number of pit-dwellings excavated and lived in by Mesolithic people. We have for a long while been accustomed to shell-middens as at Oronsay, hearths as on the Pennines, and inhabited caves such as Victoria Cave, Settle, and Mother Grundy's Parlour, Creswell, from this period, in addition to the usual chipping-floors. A settlement of pit-dwellings is, however, something new, adding considerably to our picture of life as it was lived in Mesolithic Britain. Priority for the discovery of a single pit-dwelling must, however, be given to Mr. H. S. Toms for his work at Hassocks, Sussex, a site farther to the west on the same Lower Greensand belt as Selmeston.¹ It is true that we have no accurate record of the pit-dwelling in this case, but there is no doubt as to the character of the find. The pit-dwelling was estimated at 2½ ft. in depth and 6 ft. in width, and it was found to contain over 2,000 worked flints, including 70 microliths, 30 cores, 3 scrapers, notched flakes, 2 serrated flakes, and a typical axe with transverse cutting-edge.

The Selmeston sand-pit has yielded, as we have seen, objects from the Mesolithic, Neolithic, Beaker, Late Bronze Age, Early Iron Age, Romano-British, and Medieval periods, but the only significant remains from a quantitative point of view date from the first- and last-mentioned periods. The secondary hearth in pit 1 of oak charcoal with which were associated sherds of Peterborough pottery appears to indicate little more than a camp fire lit in the cup-shaped hollow which the disused pit-dwelling must then have presented. Both the infilling of pit 1 below the secondary hearth and that of pit 3 were innocent of any admixture of non-Mesolithic material. It is further interesting to note that out of the 14 charcoal samples investigated from the Mesolithic infillings, no less than 11 proved to be hazel, 2 only being oak, and 1 hawthorn, whereas each of the 32 samples from the secondary hearth in pit 1 were oak. At the same time the presence of oak charcoals at all in spit III of pit 3 is of great importance, as it shows the Selmeston industry to date from late in the Boreal period at earliest, as it was not until that time that the oak immigrated into this country. The absence of bone due to the natural conditions of the site is disappointing, but it is interesting to recall that fragmentary hazel-nut shells were found in the infillings of both pits 1 and 3.

¹ H. S. Toms, *Brighton and Hove N.H. and Phil. Soc.*, 1907, and *The Antiquary*, July 1915; also Clark, *The Mesolithic Age in Britain*, p. 77.

A LATE MESOLITHIC SETTLEMENT SITE 155

Turning to the flint industry, in conclusion, we may ascribe it both on the microlithic forms present and upon the advanced form of the axes to the later half of the Mesolithic period. Perhaps the closest parallel is to be found in the contents of the Hassocks dwelling-pit, where as we have seen there was an industry including microliths and a transversely sharpened core axe. Similarly we might compare it with the Peacehaven¹ and West Heath² industries, each of which also yielded the trapeze or *petit tranchet* arrow-head. It is interesting to note that all the sites mentioned agree with Selmeton in that they have yielded finely serrated flakes. Close similarities are also apparent between the Selmeton industry and those of the Horsham region, which have been studied in greater detail.³ All the main classes of microlith 'A'-'G' found on the Horsham sites occur at Selmeton, but there is one striking difference in the all-important question of the proportion in which each class occurs. In all the classes but two the Selmeton percentages fall within the range of variation in the various Horsham sites, but in these classes 'A' (obliquely blunted points) and 'F' (hollow-based points) there are striking and complementary divergences. Thus whereas class 'A' forms in the Selmeton industry as much as 53 per cent. of the whole microlithic content, at Horsham it averages less than 36 per cent., while class 'F', which at Horsham amounts on the average to 23 per cent. of the whole, at Selmeton accounts for no more than 6 per cent. It is moreover extremely significant that whereas 6 out of 8 or 75 per cent. of the hollow-based points from Selmeton are of the more primitive symmetrical variety (F. 1. b and F. 2. b), at Horsham they form only 22 out of 251 specimens or 8½ per cent. Thus not only does the primitive obliquely blunted point ('A'), the basic form from which all others are derived, predominate at Selmeton at the expense of the hollow-based point ('F'), but of these latter the more primitive variety is found in far greater proportion in its class at Selmeton than at Horsham. From this evidence it would appear that Selmeton is either slightly earlier than the main Horsham culture, or else that it lay outside its area of maximum influence. Certain features of the Horsham culture, notably the asymmetric hollow-based point, are peculiar to certain parts of Sussex, Kent, and Surrey, and it is fairly certain

¹ J. B. Calkin, *S.A.S.C.*, lxv, 224; J. G. D. Clark, *The Mesolithic Age in Britain*, p. 82.

² J. G. D. Clark, *S.A.S.C.*, lxxxiii, 145, and *The Mesolithic Age in Britain*, p. 75.

³ See Clark, *Arch. Journ.*, xc.

that the Horsham region on the Upper Tunbridge Wells Sand must be considered as the centre of this vigorous local development. It is interesting that of the other Sussex sites to be compared with Selmeton, Peacehaven and Hassocks have yielded relatively few hollow-based points, and West Heath none. In the present state of knowledge, however, it would not be wise to decide whether the differences noted between this group of sites and those of the Horsham region are due to differences in age or to regional variation of culture.

For the benefit of students it should be stated that both the specimens excavated by the author and the collection formed by Dr. E. Curwen, F.S.A., have been placed in the Barbican House Museum at Lewes.

APPENDIX I

Table of Finds from Dwelling-Pits

	Spit	I	Primary flakes		Cores	Core dressings	Microliths	Micro-burins	Points with bulb	Saws	Convex scrapers	Miscellaneous	Calcined flints*	Totals	
			246	2											
Pit 1	II	256	8	2	6	1	0	0	0	4	1	0	1	278	
	III	200	10	2	3	0	0	0	0	4	4	1	224		
	IV	1,161	51	1	26	4	3	2	4	2	54	2	1,308		
	V	1,253	30	26	30	6	7	4	9	3	215	2	1,583		
	VI	868	9	10	12	4	2	0	0	4	2	166	1	1,077	
	VII	579	12	7	12	3	3	1	2	3	70	3	692		
	VIII	372	6	6	12	1	0	1	1	3	1	83	1	485	
	IX	190	5	4	1	1	0	0	0	1	1	55	1	258	
	X	191	1	5	4	0	1	0	0	0	2	66	2	270	
	TOTAL (Pit 1)		5,316	134	64	109	22	18	8	33	20	713	6,437		
Pit 2	.	.	49	2	0	2	0	0	0	0	0	14	0	67	
Pit 3	Spit	I	215	4	3	6	1	1	0	2	2	41	2	275	
	II	194	3	5	2	1	0	0	0	1	2	53	2	261	
	III	281	6	2	5	1	1	0	2	2	2	65	2	365	
	IV	167	5	3	1	1	0	1	1	1	0	36	0	215	
	V	275	11	1	5	1	1	2	1	2	103	2	402		
TOTAL (Pit 3)			1,132	29	14	19	5	3	3	7	8	298	1	1,518	

* We include here only those calcined flints showing no human workmanship. Many of the flints included in other columns were also burnt.

APPENDIX II

*Key to the Exact Provenances of Illustrated Specimens**From pit 1:*

- Spit I. Nos. 7, 60, 71, 82, 86.
- II. Nos. 15, 37, 44, 66.
- III. Nos. 48, 96.
- IV. Nos. 6, 10, 12, 17, 21, 22, 26, 34, 40, 42, 43, 54, 55, 57, 59, 61, 65, 77, 87, 93.
- V. Nos. 1, 4, 14, 16, 19, 23-5, 28, 29, 31, 38, 45, 46, 49, 52, 68, 70, 72, 74, 76, 79-81, 83, 90, 96 A, 98.
- VI. Nos. 5, 13, 32, 35, 51, 56, 58, 63, 75, 91 A.
- VII. Nos. 27, 30, 41, 50, 62, 67, 69, 84, 85, 92, 95.
- VIII. Nos. 2, 8, 9, 33, 36, 39, 47, 53, 73, 88, 94.
- IX. Nos. 20, 64, 89, 97.
- X. Nos. 3, 11, 18, 78, 91.

From pit 2:

- Nos. 139, 140.

From pit 3:

- Spit I. Nos. 99, 102, 103, 107, 108, 114, 117, 122, 129, 130, 132, 136.
- II. Nos. 106, 109, 115, 131, 133.
- III. Nos. 100, 101, 104, 111, 116, 118.
- IV. Nos. 110, 112, 128, 135.
- V. Nos. 105, 113, 119-21, 123-7, 134, 137, 138.

Found loose:

- Nos. 141-189.

APPENDIX III

The microliths from the site are here classified on the basis published in *Arch. Journ.*, xc, 52. To facilitate easy reference to the illustrations the microliths on figs. 4, 7, and 9 are grouped apart.

FIG. 4 (Pit 1).

Class A. 1. a, nos. 2-12, 14; b, nos. 1, 13; c, nos. 15, 16.
2. a, nos. 17-24.

Class B. 2, nos. 26-30; 4, nos. 31-3.

Class C. a, nos. 25, 34.

Class D. 1. b, i, no. 35.

2. a. i, nos. 37-9; ii, no. 40.

5, no. 43.

6. b, nos. 44, 45.

8. b, no. 47.

Class E. 2, no. 48.

Class F. 1. a. i, nos. 52, 53.

2. a. i, nos. 50, 51.

Class G. 2. a, nos. 54, 55.

Too fragmentary for certain classification, nos. 36, 41, 42, 46, 49.

It may be noted that pit 1 yielded in addition fragments of fifty-four more microliths.

FIG. 7 (Pit 3).

Class A. 1. a, nos. 99, 101, 119, 126; b, nos. 100, 102.

Class B. 1, no. 104.

Class D. 1. a. i, no. 105; ii, no. 106.

2. a. i, no. 103.

Class F. 1. a. i, no. 108.

Too fragmentary for certain classification, nos. 107, 111-16, 125.

FIG. 9 (Pit 2, nos. 139-40; otherwise loose).

Class A. 1. a, nos. 140, 141, 143-6, 148-52; b, nos. 141, 147.

2. a, nos. 153, 154, 156; b, 139, 155, 157.

Class B. 1, nos. 158-60.

Class C. 1. a, nos. 161-3; b, nos. 164-6.

Class D. 1. a. ii, no. 167; b. ii, nos. 168-71; iii, no. 172.

2. a. i, nos. 173-4.

6. b, no. 174A.

Class E. 2, no. 175.

Class F. 2. a. i, no. 176; b. i, nos. 177, 178.

Unillustrated loose finds; number of specimens in brackets.

Class A. 1. a (11); b (2); 2. a (6); b (4).

Class B. 1 (1).

Class C. 1. a (3); b (2).

Class D. 1. b. ii (1); iv (1).

2. a. i (2).

6. b (1).

A Hoard from West Norway

By JOHS. BØE, Bergen Museum

In the farm of Hatteberg, formerly belonging to the barony of Rosendal to the south of Bergen, there was found in December 1932 a Viking period hoard (pl. xix) consisting of a gold armlet of twisted wire (weight 164·62 grammes), a large silver torc of the same workmanship (weight 403·5 grammes), and a silver brooch of penannular type. The objects lay together about 2 ft. deep in the ground without any protection, the armlet being threaded on the torc. Evidently this was no burial but a treasure, of a kind well known all over northern Europe in the Viking period, from Russia to the British Isles. The torc and armlet are of well-known form and technique, but among the best and most valuable of their class. Of greater interest is the brooch. It is a casting scarcely if at all finished by the chisel. The hoop is flat on the back, which is unornamented. On the front of either terminal a thin gold plate is fitted into a frame, and held in place by a silver rivet with large round head. The plates are ornamented with filigree of notched gold wire, and the rivet-heads also carried some silver filigree. This, however, now shows traces of wear, as does the hoop. As for the rest, the form and decoration may be seen from the illustration.

The brooch is a curious mixture of Irish and Scandinavian art and craftsmanship. The form with the broad flat terminals is in its origin unmistakably Irish. The same may be said also of the gaping jaws at the junction of hoop and terminal. Heads varying in shape may be seen finishing the hoop on older varieties of these brooches (A. Mahr, *Christian Art in Ancient Ireland*, vol. i, xiii, 14; xii, 2). Though the stylized profile heads on our specimen seem to develop in the Viking period, possibly under Northern influence (R. A. Smith, *Archaeologia*, lxv, pl. xxviii), they retain a character which most certainly is not Scandinavian. In the same way the composition of the ornament on the terminals is mainly Irish, but motives and execution Norse, the large rivet-heads replacing the amber setting (Smith, *loc. cit.*, p. 241), and gold filigree replacing the interlacements or zoomorphs commonly used on the older and purely Irish brooches. The interlaced triangle behind the head is not to my knowledge found on truly Norse objects. On Irish antiquities it is on the other hand rather common, used not only on brooches as on the Hatteberg specimen, but also to fill small

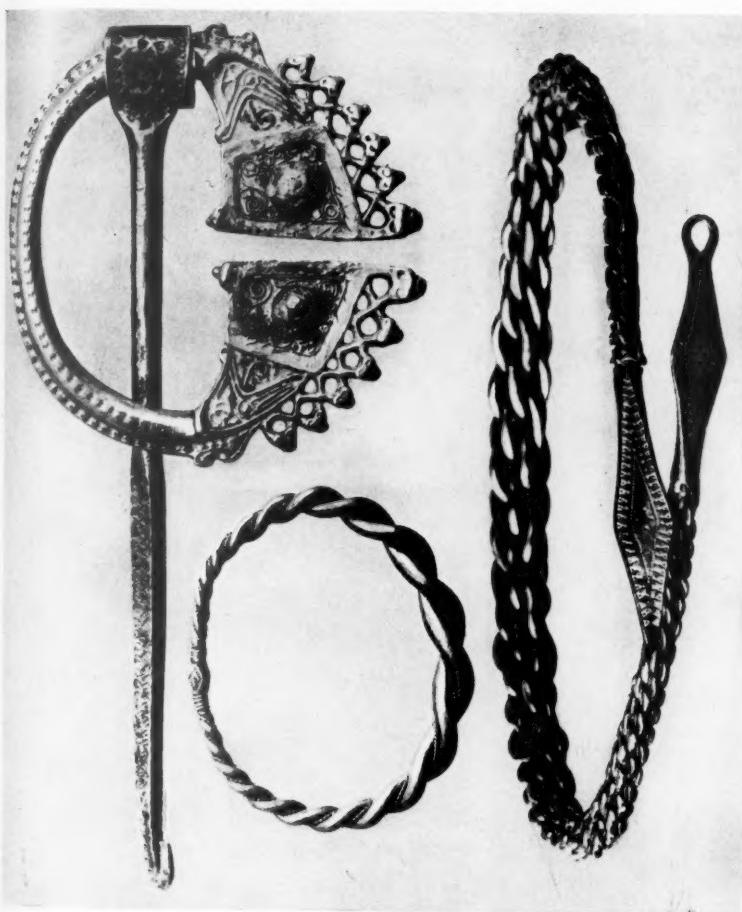
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empty spaces on other metal-work (e.g. Smith, *loc. cit.*, fig. 10, pl. xxvi, 6, pl. xxviii; Bœ, 'An ornamented Celtic bronze object', fig. 14, *Bergens Museums Årbok*, 1224-5). The Irish custom of placing more or less stylized zoomorphs along the outer edge of the terminals may here be traced in the degenerate animals of the margin. On the other hand, the open border of the terminals, as far as I know, is to be found on no obviously Irish brooch; and the row of heads is typically Scandinavian, probably from the beginning of the tenth century, the date of the well-known Cuerdale hoard.

Indeed our brooch, as pointed out to me by Prof. Haakon Shetelig, seems to throw light on one of the silver fragments in this hoard. In his publication of this find Mr. Hawkins figured a fragment (*Arch. Journ.*, vol. iv, 1847, p. 192, fig. 98) which could not be explained at the time, but which is without doubt broken off a brooch almost identical with ours. The fragment represents the corner of the right-hand terminal with a framework and a row of animals' heads which scarcely differ from those on our specimen, only that the noses seem to be somewhat longer. The terminal head being larger than the others is another detail that strengthens the likeness. The drawing seems to show that the Cuerdale brooch has even had a frame for loose inlay on the broadest part of the terminals. Indeed the likeness is so great that the two brooches may be with reason supposed to belong to the same 'school', if they are not the work of the same craftsman.

If we try to locate the place of fabrication of the brooches, the Cuerdale hoard itself is of some help. Like so many of the greater Viking period hoards, this treasure consists of coins and scrap-metal, pieces broken off the most varying objects and piled together in the possession of one man or of several persons in common. But among the large number of fragments in the Cuerdale hoard there is, to judge from the drawing given by Hawkins, scarcely one which was certainly brought from anywhere outside the British Isles. This also bears on the spiral armlet (Hawkins, fig. 61) and the thistle-brooch (Hawkins, fig. 62, (pin) figs. 63 and 64).¹ Indeed the Cuerdale find has

¹ Both types are among archaeologists called 'Baltic' or 'oriental', though their origin and appearance in Western Europe, at all events with regard to the thistle-brooch, are entirely obscure. The armlet-type, common in Baltic countries (Müller, *Ordning II Fernalderen*, fig. 638), probably under influence from Russia (Arne, *La Suède et l'Orient*, figs. 306, 307), is found once in Western Norway (Bœ, *Bergens Museums Årbok*, 1927, historisk-antikvarisk rekke, nr. 2, fig. 4), and in a couple of instances among the Viking silver in Ireland. The thistle-brooch on the other hand is not 'Baltic' with regard to distribution.



Gold and silver hoard, Hatteberg, Rosendal, Norway

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upon the whole a remarkably local stamp compared with corresponding finds in Scandinavia. This view holds good even with regard to the coins in the find, of which—according to a list kindly furnished by Dr. Brooke of the British Museum—about 3,000 are Northumbrian Viking, nearly as many Anglo-Saxon, and only about 1,000 oriental (partly Spanish?) and Continental. As nothing closely allied to these brooches has hitherto been found in Scandinavia, it is reasonable to look for parallels within the Viking area of the British Isles. Reference may be made to a brooch, probably found in Ireland and now preserved in Trinity College Library, Dublin, which was recently published by Dr. Mahr (*loc. cit.*, pl. 48, fig. 4; E. C. R. Armstrong, 'Four brooches', *Proc. R.I.A.*, xxxii, no. 16). The Trinity College brooch is mainly of the same form as the Cuerdale-Hatteberg specimens, with open work along the terminals, and a framed panel holding a loose plate with a large round boss in the centre, placed in the middle of each terminal. The brooch marks a further development, as the open framework has extended round the contour of the terminals, thus reducing the centre-plate in size and importance. The plate is decorated with imitation filigree which appears to be cast, and the central boss has filigree like the Hatteberg specimen, but whether genuine or imitation cannot be seen from the illustrations. Upon the whole there can be little doubt that this brooch is due to a Viking craftsman. Indeed Mr. Kendrick of the British Museum, after a thorough investigation of the brooch, is inclined to go still farther. In a letter he expresses the opinion that the brooch shows very little Irish influence at all.

In trying to trace the relations of our brooch, other characteristic traits may be mentioned—the gaping jaws and the trefoil knot at the ends of the hoop. The same motives appear on a limited number of brooches in the British Isles so similar in design and execution that they might be called a goldsmith's mark. The form of the brooches in question is quite constant, with broad, nearly triangular terminals, the decoration on the same consisting of degenerate zoomorphs in panels between a framework of flat bands with large raised bosses. There can be little doubt that these brooches were manufactured in Ireland, all those published being found in Irish soil [Mahr, *loc. cit.*, pl. 37, 2 (Smith, pl. xxviii, 1); pl. 38, 2, pl. 39, 1 and 2 (Smith, pl. xxvii, 6)] except two fragments from silver hoards in the north of England (Cuerdale, *Arch. Journ.*, 1847, fig. 91; Golds-

Though some specimens are found in Scandinavia the type is more frequent in British and Irish silver hoards of the Viking period. Indeed the origin of both types may with some reason be sought for among eastern peoples.

borough, Smith, xxviii, 3). On the other hand, Mr. Reginald Smith in his paper so often referred to here (p. 240) connects the decoration on these brooches with the tortoise brooches of the Vikings, a supposition which seems entirely justified. It is of very little interest here to argue whether these brooches are due to Norse craftsmen carrying on Irish traditions, or to Irish under the influence of Scandinavian art and craft. The main point is that they prove a blending of Irish and Northern elements and tradition, towards a common local art-form or perhaps even style, which is limited to the Viking area from Ireland to the north of England, an area in which the kingdom of Dublin was at times dominant. Back to this milieu it seems reasonable to trace the origin of the Hatteberg brooch and the two other specimens closely allied to it.

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Fresh Facts relating to the Boyn Hill Terrace of the Lower Thames Valley

By J. P. T. BURCHELL, F.S.A.

DURING the past five years I have confined my study of the '100-foot' terrace to the gravel-pit at Swanscombe which com-

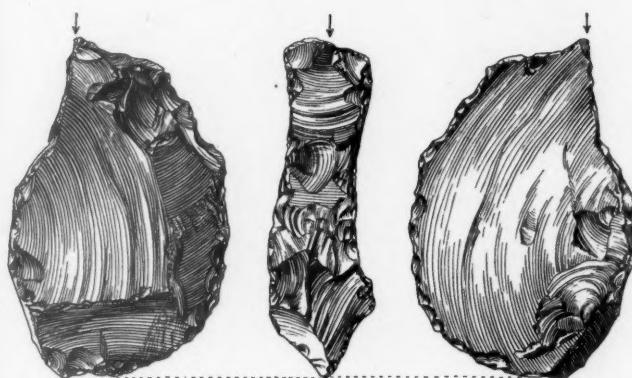


FIG. 1. Massive graver made from a primitive Levallois flake with faceted striking platform. Right-hand edge of upper surface shows secondary flaking. The specimen, which is of banded flint, is slightly rolled and of a glossy mahogany colour. Clacton I. From lower gravel, Barrack Pit, Swanscombe (3)

mands a view eastwards over the Ebbsfleet valley. Within a few weeks the ballast will have been wholly cleared from above the chalk. For this reason a summary of the evidence the site has furnished will not be out of place, more especially as up to the present only a very incomplete account has been published.¹

The sequence of deposits revealed, in descending order, is as under :

- g. Surface-soil.
 - f. Upper gravel.
 - e. Upper loam.
 - d. Middle gravel and sand. }
 - c. Lower loam.
 - b. Lower gravel and sand.
 - a. Chalk.
- Glacial deposit.
- Boyn Hill or '100-foot' terrace.

¹ Chandler, R. H., *Proc. Geol. Assoc.*, 1932, vol. xliii, pt. 1, pp. 71-2.
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The lower gravel and sand contains artifacts of Early Mousterian (Clactonian I and II) age, the earlier series being generally of a characteristic glossy mahogany colour and usually exhibiting glacially striated surfaces. Besides the customary flakes and cores there occur well-finished implements—a series



FIG. 2



FIG. 3

FIG. 2. Side scraper made on a flake with flat striking platform and two cones of percussion. Scraping edge made of resolved flake scars. The specimen is unrolled and unpatinated. Clacton III (High Lodge type). From middle gravel, Barrack Pit, Swanscombe ($\frac{2}{3}$)

FIG. 3. Hand-axe of plano-convex section made from a flake; lower surface flaked all over; left-hand edge of upper surface formed of resolved flake scars. The specimen is unrolled, with a porcellanous white patination. Early Mousterian (Levallois I). From upper loam, Barrack Pit, Swanscombe ($\frac{2}{3}$)

which I propose illustrating at a later date and of which fig. 1 forms an example.

The lower loam, with its fluviatile shells, is a constant feature: it is usually 1 ft. 6 in. thick, though on occasions this depth is increased to 3 ft. 6 in.

The middle gravel and sand reveals Acheulian horizons yielding hand-axes in mint condition. In addition, this bed contains Early Mousterian (Clactonian III and Levalloisian I) specimens which are unrolled and unpatinated (fig. 2).

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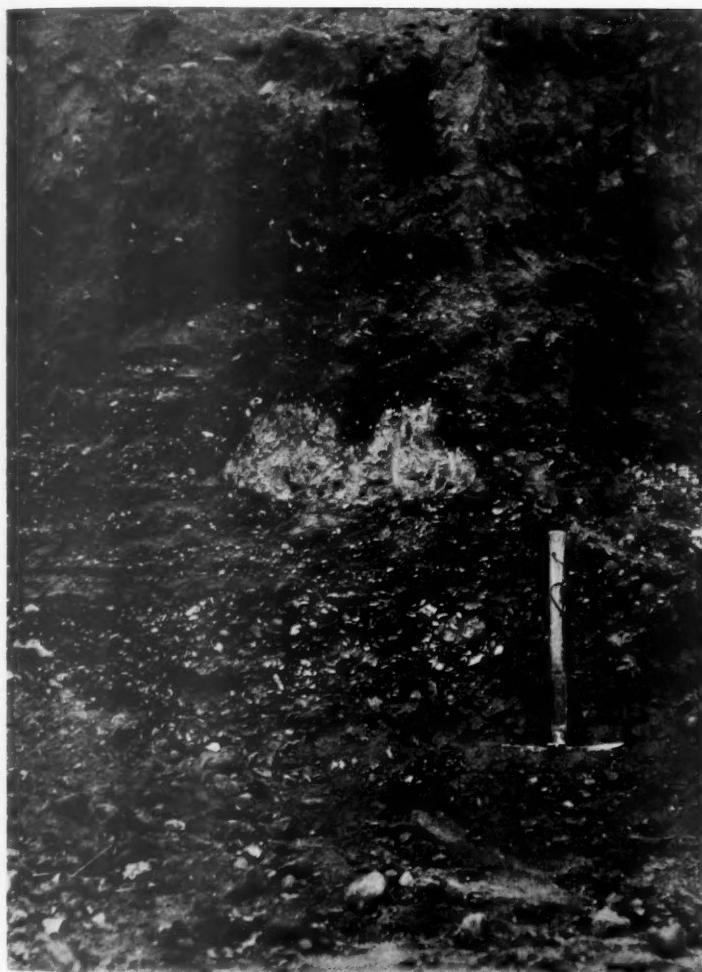
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View of 'raft' of Coombe Rock at base of upper gravel resting upon middle gravel. The ledge in front of the hammer consists of lower loam which has a thickness of 1 ft. 6 in. North face, Barrack Pit, Swanscombe. Length of hammer 1 ft. 3 in.

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Traces of the upper loam are extremely scarce : they average 3 ft. in thickness. I entertain no doubt that this deposit represents the final phase of the river's activities during Boyn Hill times and that subsequent denudation has removed all but a few isolated remnants of the original spread. At the base of this stratum there occur late Acheulian and Early Mousterian

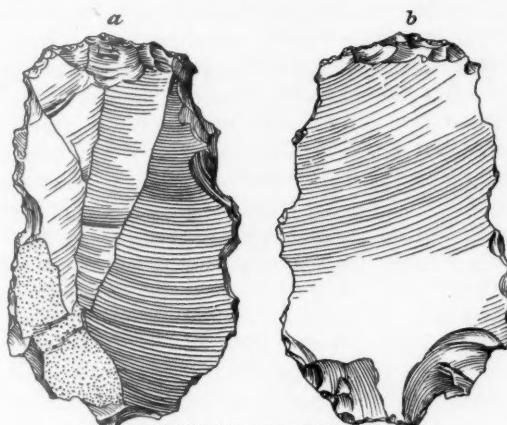


FIG. 4. Levallois flake made into a square-ended scraper (b); bulb of percussion flaked away. The specimen is little abraded and shows the beginning of 'basket-work' patination. Early Mousterian (Levallois I). From upper gravel, Barrack Pit, Swanscombe ($\frac{2}{3}$)

(Clactonian III and Levalloisian I) implements which are unrolled, though totally covered by a white porcellaneous patination (fig. 3).¹

The upper gravel is best described as an unstratified stony loam or stony clay—according to the matrix. The deposit is much festooned, and its contained pebbles often rest vertically. Not only does this upper gravel truncate the patches of upper loam but it may frequently be seen plunging down into the underlying middle gravel and sand. I had long come to the conclusion that the upper gravel formed no part of the '100-foot' terrace sequence but that it represented a period of melt-water following upon a glacial phase.² A few months after I had demonstrated these peculiarities to Drs. J. Solomon and

¹ Burchell, J. P. T., *Proc. Preh. Soc. E. Anglia*, 1931, vol. vi, pt. 4, figs. 3, 4, 5, and 6.

² *Ibid.*, p. 260.

L. S. B. Leakey, F.S.A., I observed, at the base of the deposit, a 'raft' of Coombe Rock (pl. xx). This additional evidence indicates that the upper gravel had been formed as a slurry which crept from the higher ground down into the valley below and that it had travelled in a semi-frozen condition. Such a process would favour the denudation of the underlying upper loam and cause the composition of the slurry to be determined by the nature of the beds over which it passed. Finally, to turn to an examination of the implements contained in the upper gravel, it will be found that they often possess characteristics associated with artifacts that have become included in a glacial bed. In marked contrast to the specimens in the middle gravel and sand some of these derived Acheulian and Early Mousterian implements show: (a) either the 'toad-belly' or 'basket-work' patination so noticeable on artifacts recovered from the Coombe Rock at Northfleet (fig. 4); (b) glacial striae; and (c) re-flaking on part of their edges most probably due to the passage of the slurry downhill.

*A bronze hammer, two helmet ornaments and
harness fittings found in Belgium*

By G. HASSE

BETWEEN 1926 and 1928, in the course of work carried out to improve the course of the Scheldt between Termonde and Ghent, dredging at a point called the Konkel, 1,000 m. below the bridge of Schoonaerde, brought to light finds of various dates. The most interesting discoveries were made in a small area, 100 m. long and 7 m. deep, which produced remains of the Palaeolithic,¹ Neolithic, Bronze, and Iron Ages.²

During the last 30 years I have been recording the geological and archaeological data from the Belgian Lowlands. The results show that the land has been sinking at the rate of 10 cm. each century, making a total subsidence of at least 6 m. since the beginning of the Neolithic period, of 3 m. during the Bronze and Iron Ages, and of 2 m. in the Christian Era. Recent observations at Termonde have confirmed these observations, so that it may be concluded that conditions at Schoonaerde, which is not far distant, were normal from Palaeolithic times down to the present day. The examination of geological samples from the Konkel proves that the site was an ancient river bed 5 m. in depth and more than 50 m. across. Under the clays of medieval and modern date was a series of fluviatile deposits resting on Tertiary sand *in situ*. Iron Age and Roman objects occurred in the highest stratum, with Neolithic finds at a lower level. The lowest fluviatile deposit yielded a Palaeolithic fauna including *Rhinoceros*, *Elephas primigenius*, *Cervus*, and *Equus*. A few of the finds are here illustrated (pl. xxi).

The first (no. 1) is a bronze hammer, in form and workmanship modelled on the neolithic hammers of horn. It measures 11 cm. in length by 3 cm. in breadth. The curved back of the head ends in a blunt rounded tip, like an antler. The projecting socket has an irregular hole, 3 cm. deep and 1.5 cm. in diameter, into which a wooden handle was inserted. The head has an oval surface, slightly convex, like the horn hammers of neolithic type. These details show that a worked antler provided the model. The type seems to be recorded only in the British Isles, whence the present example must have been imported into Belgium.

¹ G. Hasse, 'Une Station moustérienne en Flandre', *Soc. Anthr.*, 1925.

² de Loë, 'Catalogue de la Collection Bernays', *Bull. Musées roy. d'Art et Histoire*, 1931.

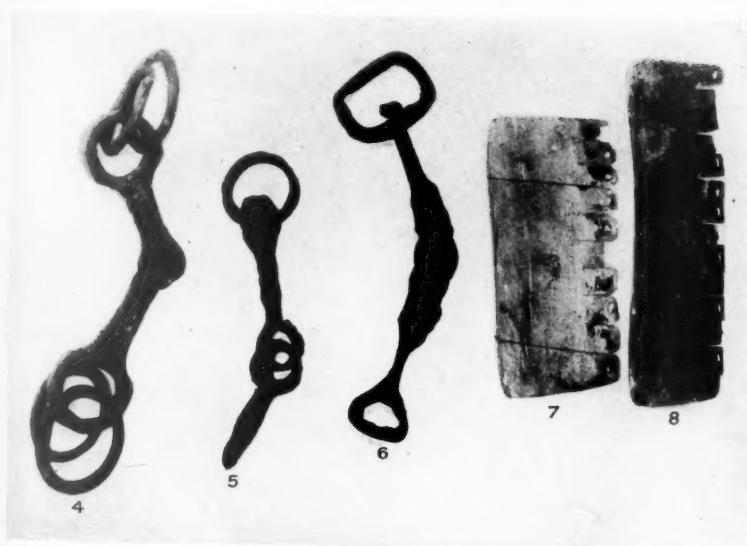
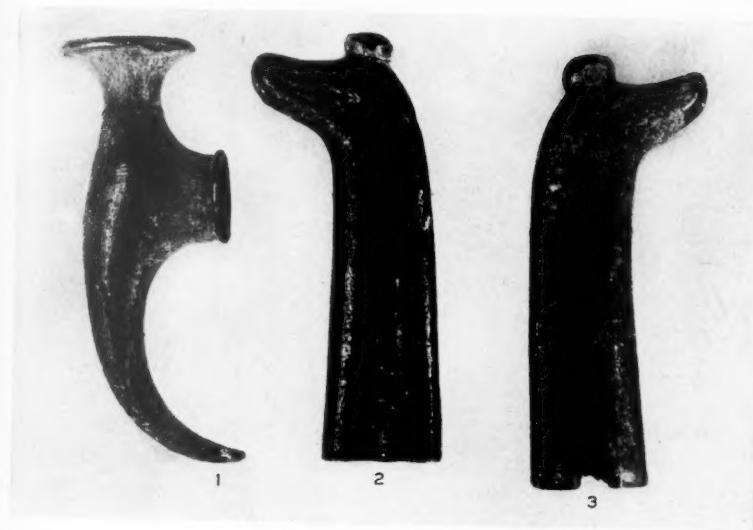
The two next bronzes (nos. 2 and 3) were found together at the Konkel. They form a pair, each 11·5 cm. long, with a breadth of 3 cm. at base and 2·5 cm. at the top. Each face is ornamented with an oblique groove. The front is pierced near the base. The top is stiffly modelled as an animal's head, surmounted by a small pierced knob. The casting is hollow with an open base, 2·7 cm. by 1·5 cm. I think that they were horns forming part of the decoration of a Bronze Age helmet of foreign (possibly British or Italian) origin.

The harness fittings, three iron bits and two ornamented trappings of bronze, were also found at the Konkel, near Schoonaerde, together with swords, spears, axes, and a helmet, all of Hallstatt or La Tène types. At the same time I recovered some remains of *Equus caballus*, with a long narrow skull. The lower jaw had a breadth of 7 cm. with a space of 5·2 cm. between the two sides, proving that the mouth could only have held a small bit.

The first bit (no. 4) is a Hallstatt type, of which examples have been found in Mecklenburg. The two heavy bars which form the bit are 7 cm. in length, including the outer terminals, which measure 3 cm. These terminals are seven-sided, and square in section, and to each are attached two rings, 4 cm. in diameter. The double inner ends of the two bars are pinched together to form interlocking rings, uniting the two parts of the bit. This is the most primitive type found in Belgium.

The other two bits are of lighter construction and should, I think, be ascribed to La Tène II. One (no. 6) consists of two hammered iron bars, respectively 7·5 cm. and 7 cm. long. The outer end of the former is bent over to form a ring, but the rectangular terminal of the other is a separate piece of metal attached to the bar. The second (no. 5) is of similar dimensions. The outer terminal of the longer bar is bent over to form a hoop, to which is attached a ring. The two parts of the bit are joined by their inner ends, which are bent over to form interlocking rings. This is the first time that either of these types has been recorded in Belgium, and I should like to know whether they are native or imported.

Two other objects are harness trappings, which may also be ascribed to La Tène II. The first (no. 7) is a quadrangular plate of hammered bronze, 12 cm. by 5 cm. by 1 mm. to 2 mm. thick. The metal is golden yellow, like many of the bronze cauldrons and axes from the Scheldt. The surface is undecorated. Along one side is a series of lugs each 1·5 cm. by 1 cm., all pierced for attachment to a leather backing. The twisted



Bronze hammer and other objects from Belgium

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threads of copper used for this purpose were found during the excavations. The second (no. 8) is similar and measures 14 cm. by 4 cm. The lugs are bent alternately, probably to allow of the bronze being fixed to a piece of wood forming part of the harness above the horse's neck. The golden bronze is in places obscured with black mud. These ornaments recall British harness trappings of 30 years ago, and those of the same period in France and Holland, which have now almost entirely disappeared. I would suggest that these bronzes represent a tradition introduced from England or Ireland during the Bronze Age, which in Belgium survived into the Iron Age.

Excavations in the ruined choir of the Church of St. Bartholomew, Orford, Suffolk

By F. H. FAIRWEATHER, O.B.E., F.S.A.

THE decayed town of Orford is one of those interesting examples on the east coast of England of a twelfth-century port, like Dunwich and Ravenspur, which, by the action of the sea, has been rendered derelict. Unlike Dunwich and Ravenspur, however, which were invaded and washed away by coast erosion, Orford's importance was lost by the throwing up by the sea of a long bar running south from Orford Ness, to the east side of the Alde river.¹ After the Conquest Orford was an integral part of the Honour of Eye and was administered along with it, being part of the possessions of the Malet family. Domesday makes no mention of either town or church, and its first appearance ecclesiastically is as a chapel to Sudbourne, evidently elevated into an independent rectory on the growth of Orford as a port. This growth must have taken place at an early date as Robert, the second of the Malet family, in 1101 granted 'mercatum et thelonium de Oreford' to his Priory of Eye. Probably then a church of some kind appeared about this time, first as a chapel, but later always referred to as 'the church of St. Bartholomew in the parish of Orford', and also termed 'libera capella aut cantaria de Orford'.²

No remains of this probable early church exist. The existing building consists of a fourteenth-century nave and aisles, now in use, attached to which on the east are the ruins of a twelfth-century choir and transept. It is with the latter that these researches are concerned. The construction of this early portion of the church is attributed to Wimar, the chaplain, one of those capable administrators employed by Henry II in his public works. He appears in 1165 associated with Bartholomew de Glanville and Robert de Valeinis in the initial construction of the Castle of Orford, and appears intermittently in this important work for several years. He became, although an ecclesiastic, joint sheriff of Suffolk and Norfolk in 1170-1, and still occupied this office in 1180-1. It is stated that he began the church between 1166 and 1170, during the contemporary work at the Castle, and also that he destined the building to be collegiate. The writer fails to find documentary evidence for these

¹ See full account of this change, *Suffolk Trans.* vol. xix, pt. 2, p. 117.

² *Suffolk Trans.* x, 88.

statements, but there is no doubt that the masonry is work of the third quarter of the twelfth century, and Wimar is definitely known to have been employed in the general development of Orford in 1170-1, as a special task.

The existing ruined choir (pl. xxii, 2) consists of the eastern piers of the crossing, partially obscured by later walls, together with four bays of the arcade. No trace remains above ground of the side walls or east ends of the aisles, or of the eastern termination of the central alley. A blocking-wall, attached to the eastern-most remaining pier on the south, runs eastward, and, retaining on its east face an accurate cast of three half-columns, shows that it was built against a Norman pier or respond, now destroyed. Excavation proved this to have been the eastern respond of the arcade, and similar in design to the still existing western ones. The intermediate piers show a remarkable range of ornament. The westernmost pair are circular and possess spiral ornament, produced by the use of half columns in relief, springing from the four angles of the base, half encircling the column, and terminating at the angles of the capital. Of the second pair from the west the southern pier has disappeared, but is shown by the drawing of S. Hooper in 1772 to have been covered by a chequer-work fret in relief (pl. xxii, 1). The corresponding pier on the north is octagonal with a delicately moulded shaft at each angle.¹ The remaining four piers are circular, with a shaft at each angle, a plain semicircle in the two western, and with slight mouldings producing a shallow trefoil form in the eastern pair. The bases to these piers, as proved by the one excavated, were square. The capitals are also square and shallow, with recessed angles, their under surface worked with scallop, and their faces with round billet ornament. The arches are semicircular with delicate roll mouldings and chevron on the face of the inner order.

The exceptional form of this ornament, apart from its variety and general richness, lies in the spirals produced in relief. This is of great rarity, the well-known examples at Durham, Norwich and Waltham all being of the incised form. There is, however, an example at Pittington, near Durham, where an arcade of this type was introduced into a formerly aisleless church by Bishop Puiset. It is extremely rich work and apparently of about the same date as the Durham Galilee.

The remains of the transept at Orford consist solely of the eastern wall of its northern limb, incorporated into the eastern wall of the fourteenth century north nave aisle. It consists of

¹ Plans of these piers are given in *Archaeologia*, xii, 141-68.

the arch from the transept to the north choir aisle, and of a half destroyed arch to the north of this, which evidently opened into the eastern chapel of the transept. The former arch is enriched with chevron upon both face and soffit, and possesses an early leaf cap, while the latter shows a rounded billet upon its main orders, and a scallop cap above a large half-column. The unusual prominence and position of billet ornament throughout this work is notable. Two triforium arches remain above. The eastern piers of the crossing still remain as far as the level of their capitals. Their form will be seen upon the plan. The aisles of the Norman church were evidently vaulted, and the necessary shafts are present for the vaulting of the central alleys, and this may have been intended also. Of the southern limb of the transept no evidence remains.

Excavation. The principal object of the excavation was to determine the form of the east end of the choir and its aisles, and the limits of the transept. The available area was very limited. Graves occupy the entire area of both side walls of the aisles, and the centre and north-east of the main alley. Work was begun on the aisle side of the blocking-wall A which was at once found to have been built against the Norman eastern respond. The latter showed the bases of three half-columns, and a vaulting-shaft for the aisle in the angle of the latter.

The aisle proved to be square ended, with an eastern wall 2 ft. 9 in. in thickness, having on its outer side a well-cut chamfered plinth. From this the line of the main building continued eastward in line with the vaulting-shaft and, when the inner side of this wall was also exposed, showed a total thickness of 4 ft. 6 in., having a 7 in. footing at each side of the main wall. This was traced eastward and at B the face of a square end was established and traced northward. The outer portion of this angle had been largely destroyed, as shown on the plan, probably containing good material which was taken up to be re-used, but it is probable that the outer footing, very likely widened at the angle, carried a shallow clasper buttress, as suggested by the dotted lines. The south-east angle of the aisle was occupied by a grave, but fortunately the width of the aisles could be accurately fixed on the north side, by the line of impingement upon the transept of the north wall.

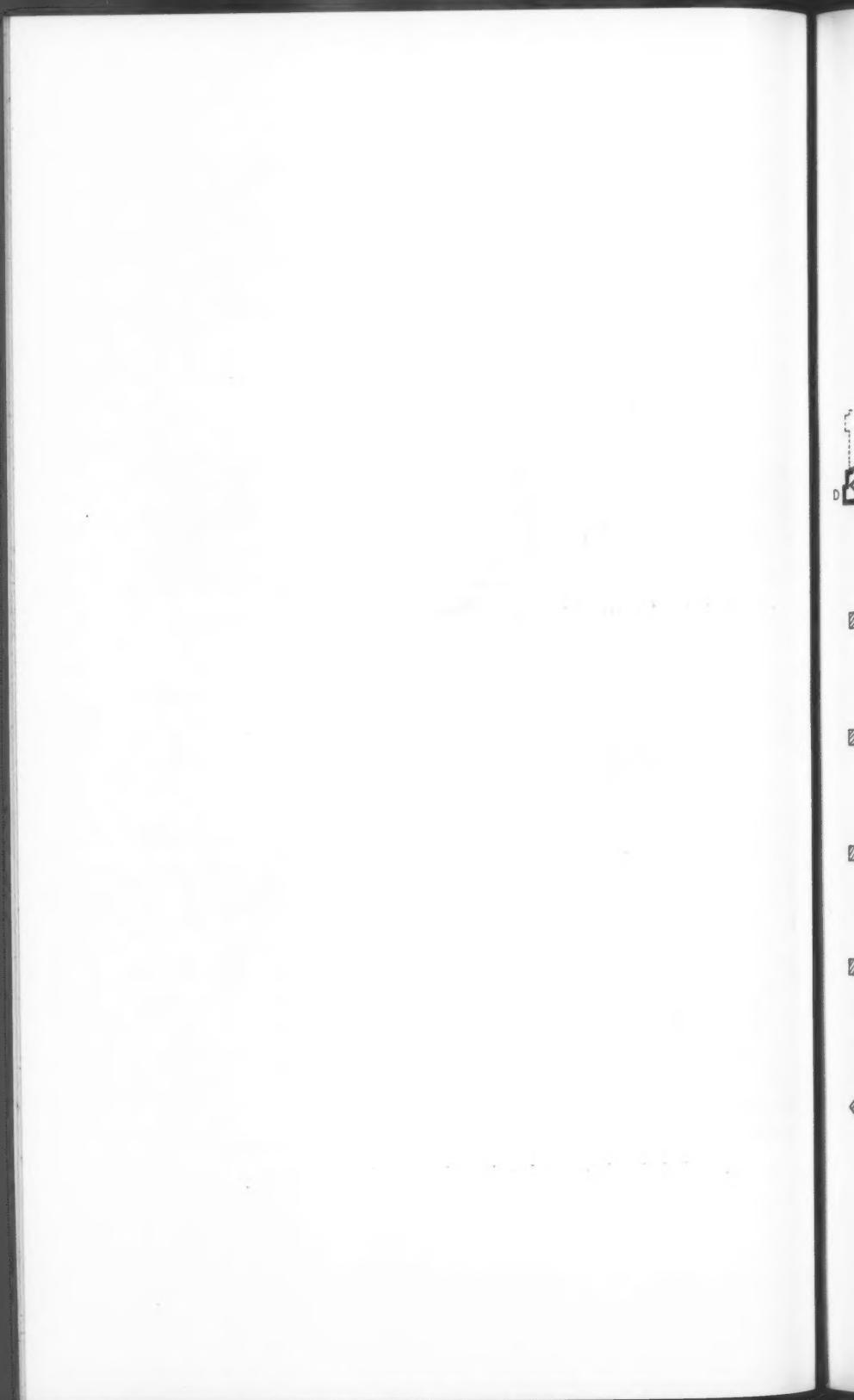
This work proved the early building to have possessed a square-ended chancel projecting some 10 ft. beyond its square-ended aisles. While working on the inner side, in addition to the original east wall at B, a second massive wall had been

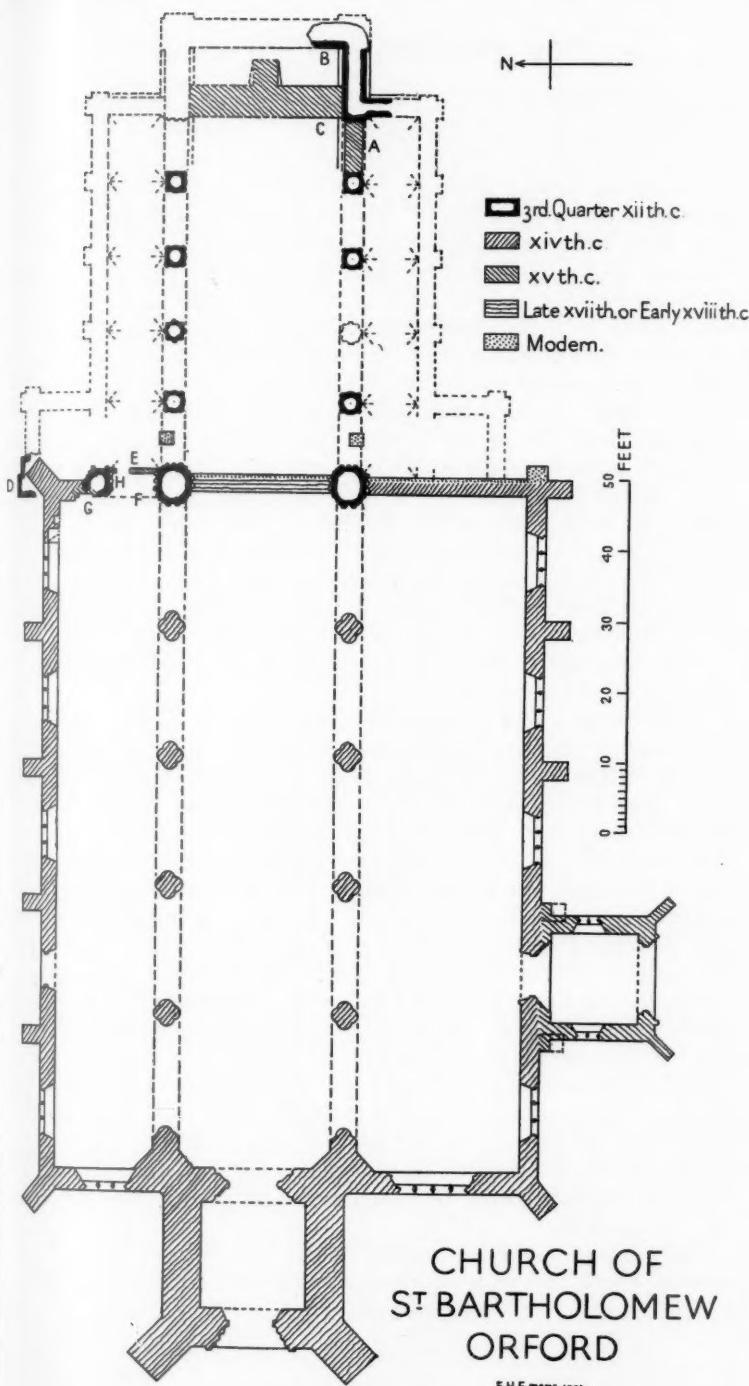


1. Orford church, east end in 1772, from the engraving in Grose's *Antiquities*



2. Orford church, east end at the end of the nineteenth century





F.H.F. mens. 1931.

struck and cleared at c. This was in sounder condition and was traceable without a break northward, showing a thickness of 4 ft. 6 in. On reaching the centre of the building it was found to possess a square buttress, supported on a slightly diagonal footing at its middle point. This wall was placed against the side walls with a straight joint, and it became evident that the building had at some period been shortened by 10 ft. by its insertion, bringing the east walls of presbytery and aisles into the same line. The function of the blocking-wall at a also became apparent, being employed to shut off the aisle chapel when the new high altar was placed against the wall c. A will of 22 April 1470 refers to the chancel as 'de novo construendo' and various other wills earlier in the century make bequests to this object.¹ It seems conclusive that extensive reconstruction took place at the latter end of the fifteenth century and that these two walls were parts of the alteration. Hooper's drawing of 1772 shows the eastern wall with its central buttress, standing to a considerable height, and the great eastern window, which it undoubtedly must have contained, was obviously placed high up, probably to allow of a large reredos below it.

The finding of these walls completed all work which was possible in the presbytery.

The transept area was next trenched, with no result north of the block of masonry marked on the plan at d. This, however, was a well-defined structure, its faces and returns sharp and clear, and it had been employed as a foundation for the heavy fourteenth-century buttress. Its contour suggests the north-east angle of the transept, and the tearaway on its eastern face the junction of the eastern chapel. It will be noted that this would give a small chapel exactly the same width as the aisle, and this was probably the arrangement, with a square end as in the aisles. No further transept connexions could be traced, in particular no north wall could be found. Whether the Norman work was checked at this point, as may have been the case, by the Fleming invasion which landed at Orford in 1172, or whether it was completed and destroyed by the building of the nave in the fourteenth century is problematical. One re-dressed stone, with Norman carving turned inward, was found during repairs of one of the fourteenth-century doorways, but a good deal of Norman material would be available at this period from the east of the transept.

As regards the later history of the church, the nave, with narrow north and wide south aisle, and with a massive western

¹ *Suffolk Trans.* x, 89-91.

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tower, was built during the first quarter of the fourteenth century. In the fifteenth century the presbytery was reconstructed as already mentioned, a large south porch was added and some curious alterations were made at the east end of the north aisle, probably in connexion with the rood loft. The arch between later nave aisle and earlier choir aisle was blocked to the east by the thin wall at E, pierced by a small doorway. In this wall the bonding of stairs can still be seen, which were carried up into the north-east pier of the crossing. The west side of the arch was probably blocked by a similar thin wall at F, as an approach to the stair was made by a doorway and passage piercing the Norman pier at G, and arriving between these two walls at H. This passage is now blocked and can only be traced by its doorways at G and H. This curious and complicated arrangement was probably made to accommodate an altar against the western thin wall. It was to place this altar that various wills in 1500 bequeathed money 'For an altar to be made before Our Lady in the Wall'.¹ It seems that the statue must have stood upon a platform placed over the stairway and within the upper part of the Norman arch. This arch was still blocked until one of the more recent restorations.

The decay of the chancel probably began with the visit of William Dowsing in 1643-4. 'We brake down 28 superstitious pictures and took up 11 Popish inscriptions in brass, and gave order for digging up the steps, and taking of 2 crosses of the steeple of the Church and one of the Chancel, in all 4.'

Its ruin was probably complete in 1720, as in that year the monument to Francis Mason, chaplain to James I, placed in the chancel in 1621, was removed to the south side of the nave, for preservation.²

The western tower required repair in 1707 and 1824. The latter was unsuccessful as the upper part suddenly fell in 1830 and still remains a ruin.

Various restorations have taken place, notably in 1870, 1896, and 1899. In the two latter the east walls were refaced. Of late the ruined piers and arches have been carefully repaired, as the cores were crumbling.

These cores were formed mainly of the local septaria, a friable material very vulnerable by frost. The ashlar of the Norman work is of Caen stone, and that of the fourteenth- and fifteenth-century work of Northamptonshire oolite of Barnack type, with some clunch. The rubble work shows the usual interesting

¹ *Suffolk Trans.* x, 92.

² *Ibid.* v, 122, with the inscriptions.

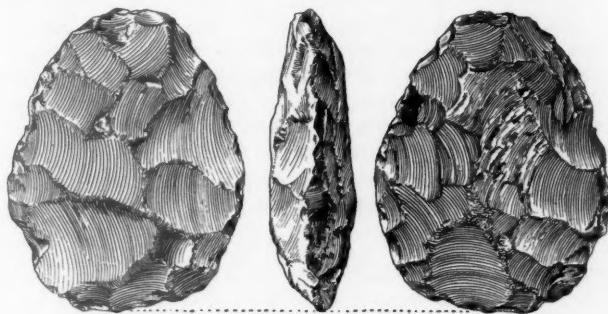
Eastern counties variety, including septaria, sandstone, clunch, flint, and red crag, the latter from the local Tertiary deposits.

The writer desires in conclusion to express his most cordial thanks to Mr. A. W. Clapham, Sec. S.A., who came down during the excavation, to the Rector and Churchwardens of Orford for their permission to carry out the work and the interest they took in it, and especially to Mr. R. A. Roberts, Hon. V.P.R.Hist. Soc., for quotations from his valuable researches in the Pipe Rolls, on the history of Orford.

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Notes

Another Devonshire palaeolith.—Though the British Museum possesses a specimen from the Lizard, Devonshire is generally considered beyond the limit for Drift hand-axes; there is, however, a series of early (Chelles) type from Kent's Cavern near Torquay. There have been several surface finds in recent years, and one from Upton Pynes was described in this *Journal*, vol. x, p. 52. There are fifteen examples in the Sturge Bequest



Palaeolith from Devonshire ($\frac{1}{2}$)

from Tavistock, and another, described as flint, with grey patina, was recently found on Brent Moor near Western Whitabarrow, at 1,450 ft. O.D. on the watershed of the Avon and Erne (*Trans. Devon Assoc.* lxiii, 359, pl. xix.). This elevated site is about five miles north of Ivybridge, on the south of Dartmoor; the latest find (see illustration) is far east of the Moor, at Rowridge Farm, Halberton, three or four miles east of Tiverton. This is about twenty-one miles from the principal site for chert implements at Broom, half-way between Chard and Axminster; and it is clear that the primitive inhabitants of Devon had to fetch their material that distance, as the local flint is scanty and unsuitable for flaking, most of it coming from sea-beaches. Most of these implements are of the same stone, and the ovate type suggests late St. Acheul. The present specimen is $3\frac{1}{2}$ in. long, with cutting-edge all round and a slight reversed-S twist on both sides. The ridges are considerably abraded and irregularly iron-stained. A recent chip shows the original colour, but the surfaces are deeply patinated—one face creamy, the other ochreous. The workmanship is good, as usual at Broom; and the form is of common occurrence both there and in the gravels of south-east England. The implement was lent for publication through Dr. E. H. Willock and is destined for the Albert Memorial Museum at Exeter.

Classification of the Pleistocene.—Negotiations for the establishment of an archaeological sequence for Ice Age deposits have been long in progress,

and interim reports on the whole situation should not be overlooked. Prof. Boswell's presidential address to Section C of the British Association at York in 1932 has met with wide approval, and is now followed by an article in *Nature* (2nd December 1933, p. 863) by Dr. K. S. Sandford of Oxford who is in general agreement with the York address. A summary of progress was required for the International Geological Congress at Washington in 1933, and Dr. Sandford freely admitted that some authorities still hold that there was only one glacial phase in the British Pleistocene, and that the claim of archaeologists to use flint implements as zone-fossils is not universally allowed. In spite of these drawbacks he notes a growing belief in a fourfold glaciation, as indicated by the Norwich Brick-earth, the Chalky Jurassic Boulder-clay, the Upper Chalky Drift, and the Brown and Hesle Boulder-clays. The critical point for archaeologists is the equation of the Upper Chalky Boulder-clay and the Upper Purple-clay with the cold period of Le Moustier. 'At the present juncture', he adds, 'few British geologists seem to be prepared to interpret the British chronology in terms of the Alpine sequence.' Prehistoric research is now exceptionally active, and archaeological evidence is the most likely to effect a junction between our glaciations and those of central Europe.

Catalogue of Bronze implements.—In 1913 at Birmingham the British Association appointed a committee with Prof. Myres as chairman and Mr. Harold Peake as secretary, to make a catalogue of all the known metal objects of the Bronze Age found in England and Wales. By 1933 the work was almost completed, and the Trustees of the British Museum were offered the filing cabinets on condition that the catalogue was kept up to date by the insertion of any new finds and made accessible to students on reasonable terms. The offer was accepted as the Museum seemed the natural home for the fruits of so much research, and accommodation was found in one of the two newly decorated rooms in the basement of the White Wing, where the Sturge Bequest has now been transferred. To gain access application must be made in the Department of British and Medieval Antiquities, and any fresh discoveries of prehistoric bronze should be reported to the Keeper in order that they may be fully described and their destination recorded. Most of the museums have been searched for the purpose, but it is essential to include particulars of all finds even if the specimens have been lost, as well as new discoveries as they occur; and Local Secretaries are also asked to co-operate in a scheme that will be of considerable use to British and foreign students of the period.

A Bronze Sword found near Garstang, Lancs.—The following account of a Bronze Age relic is communicated by Dr. Wilfrid Jackson of the Manchester Museum.

At a meeting of the Lancashire and Cheshire Antiquarian Society held on 11th October 1918 I exhibited an interesting example of a leaf-shaped bronze sword which had been found near Garstang, Lancashire.¹

¹ *Trans. Lancs. and Chesh. Antiq. Soc.*, xxxvi, 1918 (publ. 1920), 104.

The record of this, the first and only example for the County Palatine, appears to have been overlooked in recent studies which have been published on this class of weapon. It was not figured at the time of its description, but I made a cast of it before returning it to the owner.

The sword was lent to me by Mr. Hugh P. Hornby, of St. Michael-on-Wyre, and Mr. W. J. Miller, of Birmingham, the owner of the land on which it was found. The weapon was ploughed up in the spring of 1917 on Copthorpe Farm, near Garstang, within a mile or so of 'Cogit Hill', Winmarleigh, the site of the discovery of the hoard of Late Bronze Age implements,¹ now in the Warrington Museum. It is 27½ in. long (blade 24½ in.; hilt 2½ in.). The widest part is 1½ in. at about 9 in. from the point, and it narrows to 1⅓ in. near the hilt. There are six circular rivet-holes down the centre of the hilt-plate, and three in the wings on each side, making twelve in all. Five of the rivets are still in position in the wings. The hilt-plate has strong flanges, which continue (though less marked) on to the wings: there is a slight fish-tail-like expansion to the plate. The greatest width of the hilt-plate is 1 in.; the width across the wings, 2½ in.; and the inner length of the grip, 2¾ in. There are no remains of the hilt or pommel. The blade has a well-marked mid-rib, down each side of which it is hollowed and engraved with six fine parallel lines, of which the two outer of each six are the deepest. The mid-rib ceases at the first rivet-hole of the hilt-plate.

The sword agrees closely with Type B of Peake,² in having a semi-circular butt and a leaf-shaped blade with a median ridge. Regarding the distribution of this type of bronze sword, Peake remarks that it is rare in Hungary and Italy, and is apparently absent in France and southern Germany, though swords from the latter area have not yet been recorded with thoroughness. The type has been found in the Baltic region, and has been recorded from Brandenburg, Pomerania, and East Prussia. The provisional date for Type B in Central Europe is given by Peake as 1450 to 1375 B.C. It would doubtless be considerably

Upper part of bronze sword
from Garstang, Lancs. (½)



¹ *V.C.H. Lancs.*, i, 1906, 232, pl. v.

² H. J. E. Peake, *The Bronze Age and the Celtic World*, 1922, p. 89, pl. vi, fig. B.

later in the Baltic region and the British Isles and brought in by invaders.

This lunar-butt type of sword is regarded as early and referred to as the U-type of Reginald A. Smith and others. Brewis,¹ in 1923, remarked that the U-type of bronze sword does not occur in the north of England; but there is one example from the river Tay, in Scotland. The Garstang find is thus an important link in distribution, and has evidently been missed.

The sword is clearly not of the Beachy Head or V-type, found generally in south-east England associated with winged bronze axes. This type has deep notches (ricasso) at each side of the blade at the base near the hilt-plate, and, according to Estyn Evans,² is derived from the vigorous west-Alpine culture.

The discovery of the bronze sword in the Garstang district is an interesting addition to the many finds of bronze implements in the same neighbourhood. From Winmarleigh, one of the most important Late Bronze Age sites in Lancashire, two bronze hoards have been recorded, one consisting of five socketed celts and two socketed spear-heads, the other of three socketed celts and a bronze dagger.³ The spear-heads are of special interest. One is of large size, 19½ in. long, with lunate openings in the blade. In general style it resembles the one 15⅔ in. long from a hoard at Congleton, Cheshire, described by me in 1927,⁴ and one, 13 in. long, from a hoard at Dowris, Ireland, and now in the British Museum.⁵ The other Winmarleigh spear-head, nearly 8½ in. long, is like one, 12 in. long, also from the Dowris hoard;⁶ one, 9 in. long, from Preston;⁷ and very like some from the famous Willow Moor hoard, Little Wenlock, Shropshire,⁸ and two from Whittingham, Northumberland.⁹ The Dowris hoard included a bronze sword of the V-type with notches at the base of the blade,¹⁰ like one from the hoard at Whittingham, Northumberland.¹¹

The presence of so many bronze implements at Winmarleigh seems to indicate a flourishing settlement here in the Late Bronze Age. The proximity of the rivers Lune and Wyre and a smaller river east of the latter suggests that the invaders entered the area from the sea.

A Figurine from Northern Ireland.—Dr. Wilfrid Jackson also communicates the following discovery.

On two occasions last year extensive excavations were carried out under my direction at two chalk caves on the shore to the west of Ballintoy

¹ W. P. Brewis, *Archaeologia*, lxxiii, 258.

² Estyn Evans, *Antiquity*, 1930, 157–72.

³ *V.C.H. Lancs.*, i (1906), 232 et seq., pl. v (and references therein).

⁴ *Antiq. Journ.*, vii, 62–3, and figures.

⁵ B.M. *Bronze Age Guide*, 1904, pl. ii, fig. 1.

⁶ *Ibid.*, pl. ii, fig. 3.

⁷ *V.C.H. Lancs.*, i, 1906, 235, fig. 22.

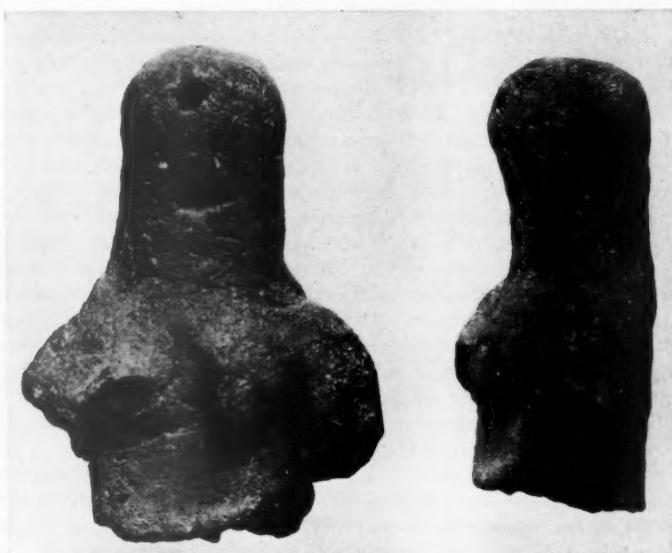
⁸ *Antiq. Journ.*, viii, 30–47, figs. 1 and 2 and pl. XIII, figs. 1 and 2.

⁹ *Archaeologia*, lxxiii, pl. XLIV, fig. 31.

¹⁰ B.M. *Bronze Age Guide*, 1904, pl. ii, fig. 6.

¹¹ *Archaeologia*, lxxiii, pl. XLIV, fig. 31.

Harbour, co. Antrim. One of the caves, Park Cave, has been known for a considerable time, but had never been investigated; the other cave was discovered by me in April last and became known later as Potter's Cave. Both have yielded ample evidence of occupation by man, and a full report on the finds is in course of preparation. The work was carried out by means of a grant from the Belfast Corporation and by the kind



Figurine from Northern Ireland (c. 2*½*)

permission of the landowner, Mr. Francis M'Shane. During the excavations at Potter's Cave in August a find of considerable importance was made in the presence of myself and my two able assistants, Miss M. Gaffikin, of Belfast, and Mrs. Anderson, of Downpatrick. One of the workmen (Donegan) dug up and handed to me a most interesting object of baked clay, which on cleaning away the wet earth proved to be the head and upper part of the body of a female figure modelled in rough, sandy clay (see illustration). It had been baked in a fire to a reddish brown. The figure, which appears to represent a mother-goddess, is about 4 in. in height and 2*½* in. broad at the shoulders. The ears, eyes, and mouth are indicated by deep holes made in the clay by a splinter of bone or wood, and in the centre of the forehead there is a round hole made in the same way. The diameter of this hole is about 5 mm.: its purpose is problematic, but it may have been intended for a stone or jewel of some kind. The neck of the figurine is the same width as the head, but there seems to be some indication of a veil draped over the head and one shoulder, thus masking

the neck. The breasts are well formed, somewhat pendulous, and placed high up. The arms are broken, the right at the shoulder, the left above the elbow: they have been modelled separately and stuck on. The legs and lower part of the body have been broken off at some date in the past.

This figurine, the first of its kind from Ireland, was found in association with Early Iron Age pottery of varied type. The paste in some of the sherds agrees with that of the figurine, in others there is much charred vegetable matter or impressions of the same on the surface. Much of the pottery consists of fragments of base and rim of almost straight-sided vessels, the rims being flattened and occasionally ornamented by cuts, notches, or thumbprints. The sides are without ornament, except in a few cases which show signs of rough combing, scraping, or finger-grooving. Some sherds possess an applied band a little below the rim, and a few have a neatly-drilled hole about one and a half inches below the rim. On the whole the pottery appears to be of Late Hallstatt character; and some sherds, at least, have affinities with those found at the Castle Hill, Scarborough. Others seem to agree with pottery from All Cannings Cross, Wiltshire; the Old Keig Stone Circle, Aberdeenshire; the Sculptor's Cave, Covesea, etc. A close study of the pottery is being undertaken by Miss Gaffikin.

With regard to the clay figurine, comparisons have not yet been made with those from Central and Southern Europe, as the chief object of this note is to place the Ballintoy find on record. According to Childe,¹ the Danubians of the Neolithic stage worshipped a mother-goddess, and she was depicted in the form of clay figurines. These people also carried on barter for objects of mystic value, especially *Spondylus* shells from the Mediterranean. It is of some interest to note that a solitary valve of the scallop, *Pecten maximus* (L.), was found near the Ballintoy figurine. This rare north-of-Ireland shell may belong to food-refuse, but was the only one of its kind, the other shells consisting of quantities of large limpets (*Patella vulgata*, L.), and the periwinkles (*Littorina littorea*, L., and *littoralis*, L.).

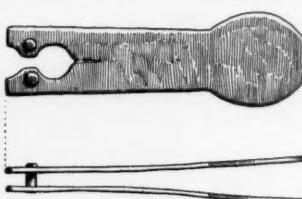
Clay figurines of a goddess have been found in the Urnfield cultures of Hungary belonging to the end of the Middle Bronze Age, and some of the clay ossuaries have a hole—a so-called soul-hole (*Seelenloch*)—bored in the wall.²

I am indebted to Professor H. J. Fleure for calling my attention to a statue menhir, known as 'La Grand'Mère du Chimquière' in St. Martin de la Bellouse, Guernsey. This stone female figure has some sort of head-draping and shows some affinity with the Ballintoy figurine. An interesting account of the Guernsey representation of the Great Mother, or Nature Goddess, is given by Dr. Florence Ayscough, in *The Report and Transactions of La Société Guernesiaise* (vol. xi, pt. 3, 1933, p. 366). The author remarks that though the cult is widely spread, even to the shores of Ireland, the form of the Goddess has not yet been discovered farther north than Guernsey.

¹ V. Gordon Childe, *The Danube in Prehistory*, 1929, p. 47.

² *Ibid.*, p. 270.

A medieval problem.—Since the publication in this *Journal* (xiii, p. 469) of some two-pronged forks between thin bronze plates, a variant (here illustrated) has been submitted by Miss Talbot, who states that it was found on the site of the infirmary at Lacock Abbey, Wilts. Two thin bronze plates are fastened together by two rivets at one end where the plates are hollowed out by way of ornament. At the other end the plates expand into ovals, the effect being that of a pair of tweezers, but such was evidently not their use, and analogy suggests that a short fork-like implement was originally inserted between the plates and held in position merely by their elasticity. Though the expansion is irregular, the shaping of the riveted end is normal; and this addition to the group rather complicates the problem, as the expanded end is more than ever difficult to pass through the loop of a buckle, on the supposition that these are strap-ends or tags of medieval belts. The site of the discovery gives possibly a limiting date, and suggests a monastic origin, other specimens being chance finds without associations. Publication may bring to light details in museums and private collections that may explain the peculiar properties of these bronzes and determine their date; but co-operation is needed to compile the modest *corpus* which is likely to furnish a solution.



Bronze object from Lacock (1)

Roman Chesterton.—Mr. T. Pape, F.S.A., Local Secretary for Staffordshire, writes:—The rectangular enclosure, twenty acres in extent, at Chesterton, two miles north of Newcastle-under-Lyme, has long been regarded as a Roman site, but no definite evidence has hitherto been forthcoming (*V.C.H. Staffordshire*, i, 189). In June 1933, however, a part of the rampart immediately west of the north angle was levelled by the farmer for the purpose of erecting a shed, and a layer of red clay containing potsherds and charcoal was encountered. The discovery was followed up by an exploration of the area by a party of senior boys from the Wolstanton County Grammar School, and a rubbish-pit was cleared. The pottery, which has been seen by Miss M. V. Taylor, F.S.A., included part of a Samian bowl, form 29, with gadroon ornament, and 'rusticated' and other pottery of Flavian date, together with a small circular lead weight weighing 40 grains. A selection of the finds is on view in the Hanley Museum, Stoke-on-Trent.

Beaker from Barham, Kent.—Mr. H. J. E. Peake, F.S.A., sends the following note:—Early in the summer of 1932 Mr. Stephen W. Brown visited a valley leading to Covert Woods in the parish of Barham, Kent, where some men employed by the Wingham Engineering Company of Canterbury were digging some trenches, and acquired from the men a fossil shark's tooth, a small Roman-British urn, and seventeen fragments of rough reddish-brown pottery. These he sent to his mother, Mrs. E.

Brown, of Peasemore House, near Newbury. Some of these seventeen fragments were submitted to me and were readily recognized as parts of a beaker. Mrs. Brown very kindly gave them to the Newbury Museum, and they were handed over to Mr. W. E. Harris of Newbury, who most skilfully put them together to form the beaker, a photograph of which accompanies this note.

The beaker is $7\frac{1}{4}$ in. high, $5\frac{1}{2}$ in. wide at the rim, $3\frac{1}{2}$ in. wide at the base, and rather more than $5\frac{1}{2}$ in. wide at the belly. The decoration



Beaker from Barham, Kent

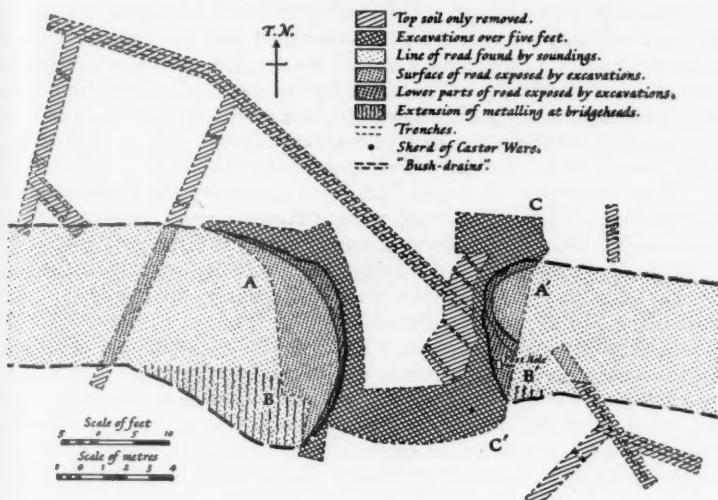
consists of irregular horizontal lines, and the specimen appears to be late and its decoration decadent.

The site of the discovery is on the south-west side of the Canterbury to Dover road and about a mile and a half from it, about five miles from Canterbury and about a mile from Barham. It was found at a depth of between 2 and 3 ft., the humus being about 4 ft. thick at that spot.

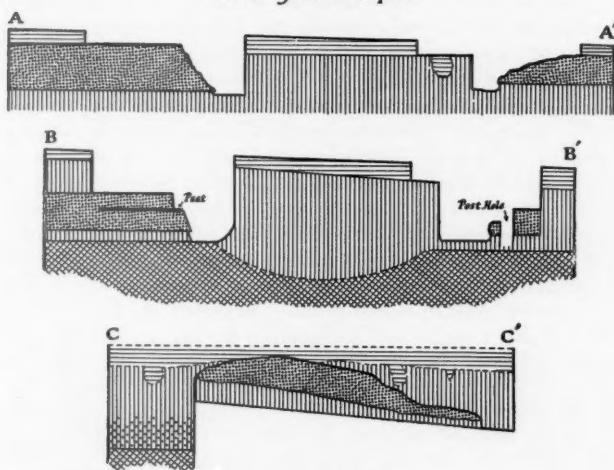
A Roman Bridge in the Fens.—Mr. R. W. Hutchinson, F.S.A., communicates the following:—In February 1933 I assisted in some excavations conducted on behalf of the Fenland Research Committee by Mr. E. J. A. Kenny, to whose courtesy I am indebted for permission to publish this note.

The Roman road from Denver to Peterborough at a point 400 yards west of the place where it crosses the line of the Old Bedford River is intersected by a 'roddon' (one of those silt banks representing the beds

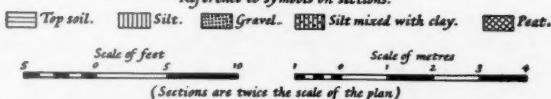
Plan of Roman Bridge Abutments at Nordelph.



Sections from above plan



Reference to symbols on sections.



Roman Bridge abutments at Nordelph
(By permission of the Royal Geographical Society)

of extinct streams left high and dry by the wastage of the peat) just before the said roddon joins a larger silt bank which runs parallel for a space with the road. This bank is a second extinct river. Major Fowler, by whose researches 'roddons' have acquired archaeological fame, remarked this intersection on an air photograph, and suggested that it should be excavated to ascertain the date of the extinct river and whether it had been crossed at this place by a Roman bridge or ford.

Three trenches were dug by Mr. Kenny, exposing the abutments of a Roman bridge. The bridge-heads were 20 ft. apart, and constructed of the same red gravel, almost as hard as concrete, whereof the road was made. The wooden structure of the bridge had probably floated down stream during some flood. No timbers were found during the excavation, but associated with the eastern abutment, which was 0·61 ft. lower than the western, were two post-holes. At both bridge-heads the metalling increased in width to about double the normal breadth of the road, sloping southwards towards a ford; on the west this extension was in the form of a gradual ramp, but on the east two steps were clearly visible. The fact that one of the post-holes cut through both the steps suggests that at one time a bridge succeeded a ford, though at other times bridge and ford may well have existed together. Deep in the river silt, about 6 ft. below the present ground-surface, was found a sherd of Castor ware which must have fallen in before the bed of the river had silted up to any extent. In the top stratum of the silt were certain black lines which at first bore the appearance of trenches where sleeper beams had lain, but it is probable that they represented the courses of more or less modern 'bush-drains'.

Connected with the larger stream was a series of ditches enclosing small rectangular plots, the 'allotment gardens' of a Romano-British village. The remains of the settlement are still traceable on the air photograph in the angle made by the Roman road with the Old Bedford River. Pottery found there on the surface was examined by Mr. C. F. C. Hawkes, who stated that 'The pottery forms a series beginning in the second quarter of the second century and lasting till the fourth, perhaps the second half of the fourth. Though early coarse-ware types were retarded in this district, the second century is still better represented than the later Roman periods.' Further details will be found in the excavator's account in the *Geographical Journal*, vol. lxxxii, no. 5, p. 434.

Iron Age Pottery from Danbury, Essex.—Mr. G. C. Dunning sends the following note:—Since the note published in this *Journal*,¹ more pottery has been found on the Iron Age site at Runsell Green. Thanks are again due to the tenants, Messrs. Durham and Burr, for kind permission to visit the site, and to Mr. J. M. Bull for submitting the finds. As before, the pottery is divided into two periods, Hallstatt (nos. 1–5) and Belgic (nos. 6–9). It is probable but not certain that, as previously, the Belgic pottery was derived from the trench of an open settlement, which may be dated early first century A.D.

Fig. 1, 1. Fragment of large open high-shouldered pot with flat rim

¹ *Antiq. Journ.*, xiii, 59.

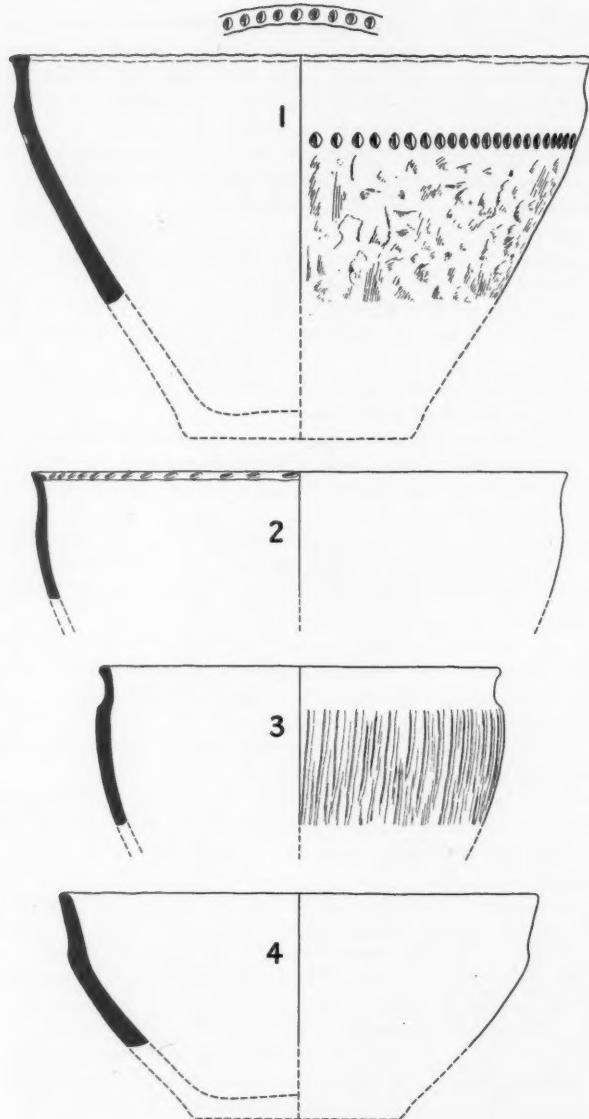


FIG. 1. Iron Age pottery from Danbury, Essex (1)

and slightly concave neck. The rim is decorated with small finger-nail marks, and 1 in. below the shoulder is a line of similar but deeper impressions. Coarse grey ware with large flint grits, buff-brown surface, striated and lumpy due to rough smoothing by the fingers.

Compare fig. 2, no. 2, of the first report.

2. Fragment of similar pot, with rim bevelled and expanded on the inside, and decorated on top with light impressions of the finger-tip. Coarse black ware with fine grit, uneven grey-buff surface.

3. Fragment of similar pot with more angular shoulder and well defined concave neck. Coarse black ware with sparse large flint grits, light red surface, striated below the shoulder.

4. Fragment of open bowl with rounded rim and everted neck above slight shoulder. Coarse grey ware with large flint grits, uneven light red surface.

Fig. 2, 5. Hollow pedestal-base. Hand-made, coarse brown ware with fine flint grit, tooled brown surface.

6. Pedestal-base with beaded edge and almost solid foot. Wheel-turned, fine grey ware. This type of base is frequent in Essex on pedestal-urns of the first half of the first century A.D., for example at Lexden (*Swarling Report*, p. 21, pl. xi, 1).

7. Fragment of small carinated bowl or cup with narrow cordons on the neck. Wheel-turned, fine sandy light red ware, coated black surface.

Compare with similar cups from Lexden and Kelvedon (*Swarling Report*, p. 22, pl. xi, 3, 9).

8. Cooking-pot with everted rim and rounded shoulder, restored from fragments. Roughly wheel-turned, coarse grey ware with sparse grit, tooled grey surface, light reddish-brown below the shoulder.

The surface is roughly scored from the shoulder nearly to the base.

The type is common in the early first century A.D. at Prae Wood, St. Albans (*Antiquity*, vi, 144, fig. 8, 47-8).

9. Base of vessel, probably of the same type as no. 8. It was pierced before firing by seven holes, arranged in a circle with one hole at the middle. Wheel-turned, grey ware with sparse fine grit, tooled grey-brown surface.

Fig. 3. Fragment of brick of light red clay. The surface is smoothed by hand, and one rounded edge is preserved; the thickness is about 1½ in. Probably Belgic, as similar primitive bricks are known from Belgic settlement-sites, for instance at Prae Wood, St. Albans (*Antiquity*, vi, 141, pl. viii a and fig. 3, no. 3).

Fig. 4. Triangular loom-weight with holes for suspension across the angles. Coarse light red clay containing large particles of broken flint and pebbles. From angle to angle it measures 6½ to 6¾ in., and is about 4 in. thick; it weighs 6 lb. This is a normal Iron Age type in use throughout the period, but here probably Belgic.

In January 1934 part of a trench was cut into in digging gravel; it is not the main trench referred to in the first report, but another some distance away. Seven fragments of La Tène III pottery were obtained from the trench, forming part of the side of a large wheel-turned storage

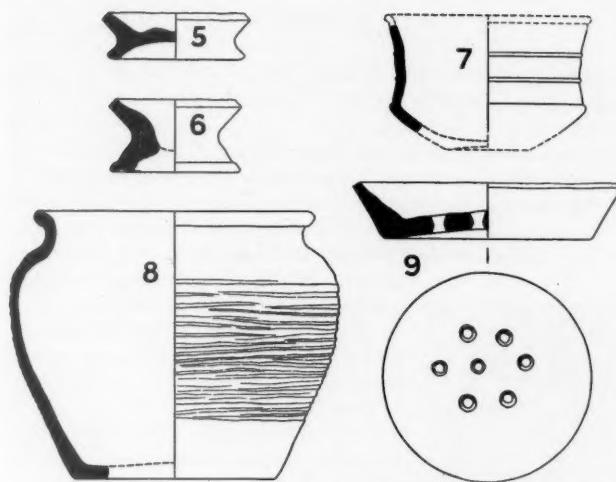


FIG. 2. Iron Age pottery from Danbury, Essex ($\frac{1}{3}$)

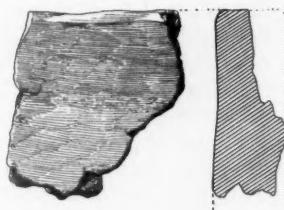


FIG. 3. Fragment of Iron Age
brick, from Danbury, Essex ($\frac{1}{3}$)



FIG. 4. Iron Age loom-weight from Danbury, Essex ($\frac{1}{3}$)

jar of coarse grey ware with butt surface. The discovery confirms the Belgic date already ascribed to the trenches and pits on the site.

Note on a Cameo of Onyx from Upper Egypt.—Mr. G. D. Hornblower, F.S.A., sends the following:—The cameo here illustrated, which was exhibited at the meeting on 11th January, is said to have come from the hoard known as the Treasure of Antinoë which appears to have been hidden in a monastery there, about A.D. 640, from fear of the invading Arabs. If this account is correct, the cameo presents an interesting example of the glyptic work of that period, of which little seems to be known.

Accounts of the presumed hoard have been published by the late Professor Walter Dennison, of the U.S.A., in *A Gold Treasure of the Late Roman Period in Egypt*, and, for a few choice specimens, by Sir Flinders Petrie in *Ancient Egypt*, 1920, Part I.

The cameo measures $\frac{3}{4}$ in. at its longer axis and is carved in onyx with white figures on a dark background. It represents Orpheus looking back at Eurydice as he conducts her from Hades, and displays an interesting feature in the gesture of Eurydice who stretches out her arm to Orpheus, causing him to look back, thus giving an added touch of pathos to the tale.

Cameo from Upper Egypt ($\frac{3}{4}$)

The drawing may be, to modern eyes, peculiar, but the design and balance are admirable. No Egyptian element can be traced, but there is much likeness to the figures from classical subjects commonly found in Coptic textiles. An Alexandrian origin may perhaps be conjectured.

A trial excavation at Witham, Essex.—Mr. F. Cottrill sends the following note:—In the autumn of 1933 a trial excavation was carried out in the western part of the earthworks at Chipping Hill, Witham, Essex, the work being made possible by grants from the Society of Antiquaries and the Royal Archaeological Institute. Thanks are due to Dr. Wheeler for help and advice throughout, and to Mr. Esmond Smith for permission to excavate.

The site is usually identified with the *burb* of Witham, which, according to the Anglo-Saxon Chronicle, was constructed by Edward the Elder in the summer of 913. The defences consisted of two roughly oval and concentric lines of fortification, the inner work covering about $9\frac{1}{2}$ acres and the outer about $26\frac{1}{2}$ acres.¹ On the west, where the ground drops to the left bank of the River Brain, the inner defences consist of a scarp with a rampart running along the top of it. A cut made through this rampart revealed the original ground-surface very clearly; on it, towards the front of the rampart, were traces of a large fire, which, placed as it

¹ *Royal Historical Mons. Commission, Essex*, ii, 265.

was on a prominent part of the site where the inner defences turn sharply, may possibly have been a beacon. In sandy material forming the back of the rampart were found two sherds of Roman pottery, which would support the attribution of the work to post-Roman times.

Cuts made within the inner rampart produced no traces of Saxon occupation, but a cut made in the level ground between the scarp and the outer rampart, near the river, revealed an occupation layer about 1 ft. thick, the top of it being 3½–4 ft. below the present surface. This layer largely consisted of charcoal and other carbonized matter, and it contained bones of ox and sheep. The associated artifacts indicate a rather poor culture; they include an iron ring, a bone point, and pottery. The last is hand-made, and the general type is a globular cooking-pot with flat base and vertical or everted rim. The upper surface of the rim is occasionally flattened, and rarely has radial or oblique slashes. The only other decoration occurring consists of horizontal and wavy striations on the shoulder. Pitting of the surface by impressions from which pieces of grass or straw have been burnt out is characteristic of Saxon pottery at an earlier period and is found here also. Two rims are sub-Roman in type. Although the pottery has affinities with the domestic ware of the pagan period, an attribution to the tenth century, as suggested by the historical evidence, may be accepted.

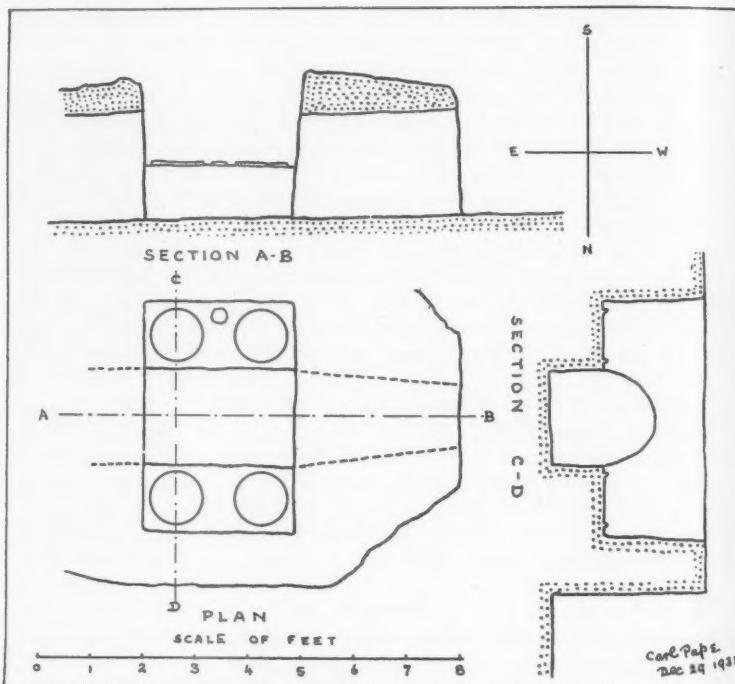
In small pits well below the Saxon layer were found a bone comb and a triangular loom-weight, indicating occupation of the site in the Early Iron Age, while a small area behind the inner rampart yielded Roman pottery, including a beaker of Castor ware. Thus there had been sporadic occupation of the site long before Edward the Elder established his stronghold here to command the Roman road from London to Colchester at the point where it crosses the Brancaster.

An ancient glass-furnace at Eccleshall, Staffordshire.—Mr. T. Pape, Local Secretary for Staffordshire, writes:—Attempts have recently been made to locate the sites of glass-furnaces set up in Staffordshire in and after the sixteenth century by Lorraine glass-workers, who spread into the woodland districts of north-west Staffordshire via Hampshire and Sussex about 1580. The Eccleshall parish church registers contain the following relevant entries:

- 1586 Peregrinus Hensie baptized.
- 1589 Jehuditha Hensye baptized.
- 1584 Catherine Tysacke buried.
- 1600 John Esquire of Blower Parke and Margaret Yevonce daughter of Yeaven Aprice, of Blower Parke, glassmakers, married.
- 1602 James Leggeye a Frenchman of the Songles, glassmaker, and one Judith Tyzake of the same place, married.
- 1602 Edward Henzey, parish of (Wisborough) Greene, Co. Sussex, glassmaker, and Sara Tetrey, parish of Eccleshall, married.
- 1603 George Henzey of Blower Parke, glassmaker, buried.

Similar entries occur in the parish registers of Cheswardine. The Eccleshall entries relate to craftsmen who had furnaces in Glass House Croft (a

field belonging to Goldenhill Farm), in Bishop's Wood, and in a field at the Wood Farm, Adbaston. In 1931-2 one of the Bishop's Wood glass-furnaces was excavated, and has since been preserved by the North Staffordshire Field Club, with the co-operation of the Ecclesiastical Commissioners. The furnace (see illustration) is a rectangular structure



Plan and section of glass furnace in Bishop's Wood, Eccleshall

consisting of two platforms, on each of which were embedded in the glazed sandstone the remains of two crucibles, whilst the fire-trench which heated the furnace with charcoal runs through the structure from north to south about a foot below the level of the platforms. Fragments of ale-glasses, wine-glasses, bottles, window-glass, etc., were found in the vicinity, and are now preserved in the Hanley Museum, Stoke-on-Trent.

Sculptured Figure from Rievaulx Abbey.—This seated figure, carved in what is probably a local stone, was found during the clearing of the site of the Infirmary Hall at Rievaulx Abbey in 1931. It has lost head and hands, and there is nothing to show what was its original position, nor how it came to be where it was found. The figure wears a long tunic girt at the waist, and a mantle, the feet being bare. The angle of the seat on

which it is set shows that it was meant to be seen from below, but it is not possible to say what position it occupied in the church or elsewhere.

No attributes remain, but it can hardly be doubted that the representation intended is that of God the Father. The work is of a high order of merit, the treatment of the drapery and of such details as the ends of the



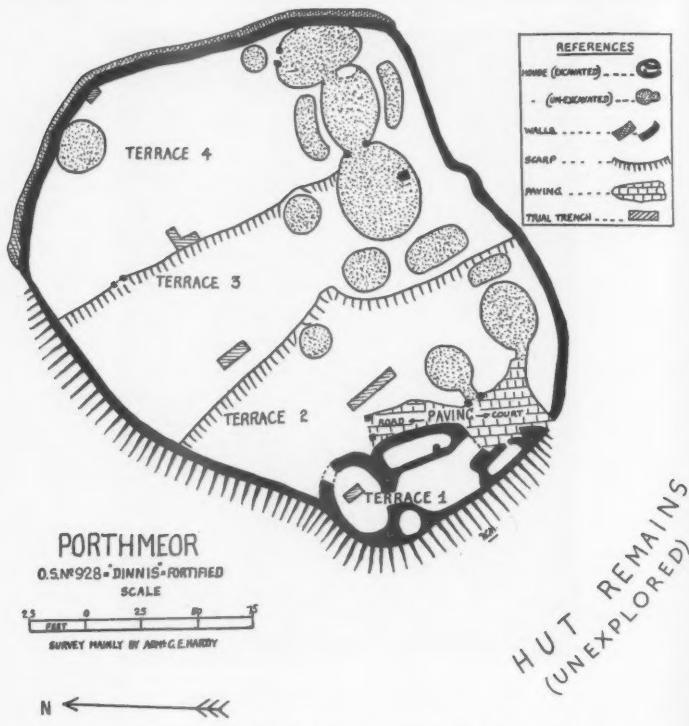
Sculptured figure from Rievaulx Abbey

girdle being very skilful, and it is fair to assume for it a date somewhere near the year 1300. No traces of colour remain; the greatest height is 2 ft. 6 in. and the width 1 ft. 5 in.

Nothing else of equal character has been brought to light in the now almost complete clearing of the Abbey ruins. It was no. 1458 in the exhibition of British Art held at the Royal Academy, January to March 1934.

Excavations in Cornwall.—Mr. R. V. Favell, F.S.A., Local Secretary, sends the following note:—The newly formed Cornwall Excavation Committee, under the charge of Lt.-Colonel F. C. Hirst, began active work on an important Romano-British village site on Porthmeor Farm, Zennor, in 1933. So far as is known at present the remains of this village occur over an area of three or four acres, contained in three fields (O.S. LXVII. 4. 928, 1000, and 1003), all the remains being heavily overgrown with bracken and brambles.

The operations of 1933 were confined to O.S. Field 928 which covers about one acre of ground. This seems to have been the fortified area of the settlement, and a portion of the defensive wall has been uncovered to the east showing that it was constructed of massive blocks of granite laid



Plan of village site, Porthmeor, Zennor

somewhat similarly to those in the walling of Chûn Castle, but with less regularity.

Within the fortified area there are four well-marked terraces on the lowest of which there is a house of Chysauster type (plan as in no. 5 house of Chysauster by Dr. Hencken's enumeration). This house was completely excavated. The Round Room was unusually large and two occupied levels in it were revealed, one about a foot above the other; in the room was a stone hearth on the lower floor set almost round a roughly circular hearth-stone.

Much pottery was found, which has been dated provisionally about A.D. 0-200, a date corroborated by two coins (Marcus Aurelius) found on the lower floor. This room had two entrances, one of which had been blocked, perhaps when the next terrace above was constructed.

The Long Room contained a circular hearth or furnace (diameter 3 ft.) surrounded by small granite slabs set vertically. Inside was a firm packing of granite clay surrounding the hearth itself which was a foot across and floored with sherds. Beneath this, down to a foot below the actual hearth, lay heavily burnt clay turned brown by heat. This formed a blunt inverted cone which gave the limits of extreme heat. The furnace seems to have been connected with the heating of metal—not necessarily the smelting of it—and it would appear that the blowing was done from the top of the hearth, since there was no sign of a flue anywhere beneath it.

In the Courtyard there was a well-designed covered drainage system such as may be seen in several of the houses at Chysauster.

There appears to have been a main entrance to the fortified area in its south-west corner. This led into a large paved court, faced by the main entrance to the house already mentioned and by the entrances to two other houses. The paved court extended upwards to the next terrace as a paved road, some twenty-five yards long. This extensive paved surface, the existence of which had not been suspected, was cleared entirely during the excavations.

The finds include pottery, spindle whorls, saddle querns, and mullers, and much iron that is heavily corroded and which has not yet been examined by experts. No tin or bronze was found, but a piece of slag that was recovered may contain the former metal.

It is hoped that the work begun in 1933 will be continued this year.

The Manuscript of the Bible from Mount Sinai.—The Trustees of the British Museum ask the support of all who are interested in the history of the Bible, from any point of view, for the purchase of the famous manuscript which Tischendorf first discovered in the monastery of St. Catherine at the foot of Mount Sinai in 1844. The romantic story of how he rescued 43 leaves of this incomparable specimen of the writer's craft from a waste-paper basket on its way to the furnace, and of how on a third visit in 1859 he succeeded in persuading the monks (who had, however, by this time burnt about three-fifths of the Old Testament) to hand over what was left to the head of the Orthodox Church, the Tsar of Russia—all this is told in the pamphlet which the Trustees have issued, the *Mount Sinai Manuscript of the Bible* (price 6d.). On the importance of this Codex, which ranks with the Vaticanus, the two being the earliest substantial sources for the text of both Testaments, it is not necessary to dwell here. The British Museum is the right place for such an historical monument, 'the most impressive book in the world', as it has been described by a distinguished palaeographer. We do not hesitate to ask readers of the *Antiquaries Journal* to send their contributions, however small, to the Director of the British Museum.

Flint implements from the Severn Basin: a correction.—By a regrettable oversight the titles of the illustrations to Miss Carpenter and Mr. Burkitt's note on p. 63 of the January number have been transposed. Fig. 1 is the implement from Wroxeter and fig. 2 that from Kidderminster.

Obituary Notice

William Page.—William Page died on 4 February at his home in Sussex, aged 72. Having been elected a Fellow of the Society in 1887, he served on the Council on several occasions and was a Vice-President from 1916 to 1920. He contributed several important papers to *Archæologia*, and for a number of years served on the Editorial Committee, where his special knowledge was invaluable. Brought up as a Civil Engineer, his natural bent for archaeology soon asserted itself, and at the age of 24 he joined his brother-in-law W. J. Hardy and became a professional record searcher and legal antiquary. Experience thus acquired stood him in good stead when he undertook, in 1902, to share the general Editorship of the Victoria County History with H. A. Doubleday. Becoming sole general Editor in 1904, he entered upon what was to prove the most important work of his life, and one by which he will long be remembered. The position was one which demanded not only wide learning and experience, but great powers of organization and, above all, tact and suavity. His patience and resource, backed by a serene sense of humour, carried him successfully through a long and difficult task, and the troubles and hindrances which the great undertaking experienced were in no sense due to any action of his. On the other hand, it is not too much to say that its successes were almost entirely due to him. On coming to the History, which had been founded in 1897 to commemorate Queen Victoria's Diamond Jubilee, he found an organization which for the most part existed on paper only. It was his task to create something which could produce the historical material essential for the proper equipment of the county volumes. There was little or nothing ready to his hand and he set to work to collect and train a staff. In three or four years he had in his control a competent and flourishing body of assistants, but a sudden and disastrous failure of funds threatened to bring everything to a standstill, and part of his staff had to be dismissed, at least for the time. After a few years a new source of revenue presented itself and the work went on again, but then came the War and all such work was at a full stop. When it started again it was on a more restricted scale, the work being almost entirely in Page's hands, and carried on at his house at Middleton in Sussex, whither all the materials for the History were removed. Even so the familiar red volumes continued to appear, though at a far slower rate, and the final phase was reached when, to ensure the continuance of the work, Page made over the whole apparatus of the History to the University of London in 1931. His connexion continued, however, in full force, and at the time of his death he was the Chairman of the Committee which the University had formed to organize its affairs.

Though constrained by the circumstances of his life to be a man of affairs, Page was essentially a scholar and historian: nothing would have been more congenial to him than a learned leisure. The kindest of men, he was never better pleased than when putting the resources of his great learning at the disposal of his friends, and many there are who are deeply in his debt. It is difficult to see how his place can be filled.

C. P.

Reviews

An Architectural History of the Benedictine Monastery of Saint Etheldreda at Ely. By THOMAS DINHAM ATKINSON. 15 x 10. Pp. xxxiv + 214, with a portfolio of plans. Cambridge : at the University Press. 1933. £5 5s.

Mr. Atkinson has written an admirable monograph on the monastery of Ely. It is illustrated by forty-one plates of maps and beautiful photographs, including some bosses by our Fellow Mr. Cave, and thirty-nine figures in the text, most of these being Mr. Atkinson's own drawings. A separate portfolio contains twenty-one sheets of plans coloured to show the dates of the buildings, with a key to explain them. He has supplemented this valuable contribution with three sheets of nineteen plans of Benedictine houses, taken from various sources, for comparison with Ely. When the monastery was suppressed and Ely was constituted a cathedral of the new foundation of Henry VIII, the greater number of the monastic buildings was retained and assigned by the award of the commissioners in 1541 to the use of the dean and chapter. This award and the Commonwealth Survey of 1649 are printed as Appendices.

The author has been able to build securely on the foundations laid by his predecessors. In 1868 Canon Stewart published *The Architectural History of Ely Cathedral*, for which he searched the archives at Ely and manuscripts and registers of the priory now in the British Museum and at Lambeth. Archdeacon Chapman devoted many years to the task of putting the muniments in order and making them accessible to serious students, and in 1907 he printed privately the surviving Sacrist Rolls of Ely from 1291 to 1360, with an invaluable introduction. Mr. Crosby left to the Ely Muniment Room an analysis of all the account rolls of the officers of the monastery. In 1930 Mr. Inskip Ladds contributed a helpful study of the cathedral church and monastery buildings to the Transactions of the Cambridgeshire and Huntingdonshire Archaeological Society.

Mr. Atkinson has thrown fresh light on some of the buildings. On p. 110 he suggests a possible identification of the *nova domus* built by the sacrist in 1291-2 at a cost of £51 9s. 10*d.* with the Black Hostrye, a lodging connected with the Infirmary Hall, on the south side, for visiting monks of the Benedictine Order, who travelled officially on the commissions of the Benedictine general chapter, or who sought hospitality on other business. With the help of our Fellow Canon Seiriol Evans, he has corrected the hitherto accepted spelling in the award of the sixteenth-century commissioners from *Gent Hall* or *Sent Hall* to *Sene Hall*, which he assumes to be a misspelling for *Seny*, though *Seyne* has a precedent for the house of the monks of Evesham at Badsey. The word is the English form of saignée or bloodletting, an operation to which the Ely monks submitted in batches seven or eight times a year.¹ Mr. Atkinson suggests that the Ely Sene Hall was perhaps a convalescent home to which the

¹ J. Willis Clark, *Customs of Augustinian Canons*, pp. lxiv, lxv.

monks who had been bled retreated to recruit their strength after their visit to the Bloodletting House (p. 115). There was another building commonly called the Bloodletting House, the north-west wing of the infirmary which had three floors, assigned by Mr. Atkinson to early fourteenth, early fifteenth, and early sixteenth centuries. In his introduction (p. xxxi) he doubts if this identification made by older investigators is correct. Not a vestige of Sene Hall remains above ground, but its site is shown on Sheet XIII as adjoining the nave of the infirmary chapel. I venture to suggest that Sene Hall was the building known as the *camera* of Prior Roger (*ante 1215—circa 1229*) which was assigned to those who had been let blood by an agreement between Bishop Hugh de Northwold and Prior Walter between 1241 and 1254,¹ not in 1300 as stated on p. 59. An excavation if possible might yield some result.

Mr. Atkinson has been puzzled by the absence in any medieval or post-suppression Ely document of the word Misericord meaning a special building in which the monks ate meat, and has not ventured to conclude that the prior's great hall was the building definitely assigned for that purpose. According to the Rule of St. Benedict meat might only be eaten by the sick and weak in the infirmary, but in the thirteenth century this observance was much relaxed, and in 1300 the general Benedictine chapter of the province of Canterbury decreed that every head of a monastery could give dispensation to his monks to eat meat as it seemed good to him.² It was then usual for the head, be he abbot or prior, to invite some of the monks in turn to dine off meat in his lodging on certain days of the week, and the cellarar and other officers did likewise. We learn from corrodies granted by the prior and convent that late in the thirteenth century they had three flesh days a week except in Lent and Advent. Bishop Walpole attempted to check these practices when he held a visitation of the monastery in 1300; meat was being eaten in the refectory as well as in the private households, known as the *domus*, of the officers of the monastery. The Bishop forbade monks in good health to eat meat anywhere, *nisi in aula seu camera prioris*. The prior's hall was in daily use in 1314 for the meals of his squires and household, and also then served the monks as a misericord. Later, as Mr. Atkinson suggests, p. 136, the upper storey of the so-called Bloodletting House may have been used for the purpose.

It is not a reproach to the author that he has relied for documentary evidence on the labours of students of records. Until a few years ago an important Ely register was in the possession of Lord Leconfeld at Petworth; it is now in the British Museum, Add. MS. 41612. A closer study of this manuscript and of the various episcopal injunctions in MS. Add. 9822, not Lambeth MS. 448 as given in error by Canon Stewart, throws light on some questions which Mr. Atkinson has left unanswered. He believes (p. 50) that there is no known reference to a library building in medieval documents, but the word occurs in the important ordinances made by the prior and convent in 1304, wrongly described (pp. xxii, 64)

¹ MS. Add. 9822, f. 57.

² R. Graham, *English Ecclesiastical Studies*, p. 340.

as injunctions given by Bishop Ketene. The reference is to the books *tam in librario quam in fratrum manibus*; the word *librarium* is used to denote a building at Worcester in 1306, and must mean a bookroom, not the presses, *armaria*, in the cloister. I venture to suggest that the bookroom was one of the vaults under the dormitory, since all those vaults were to be restored to the use of the convent according to the agreement between Bishop Hugh de Northwold and Prior Walter. The statement that Bishop Walpole gave a large and small book of injunctions to be read in the cloister is a mistranslation, copied from Bentham, from *Anglia Sacra*, i, p. 640; the volumes were the *Decretum of Gratian* and the later books of the Canon Law with *Glosses*. They appear to be those of great price stolen with a Bible and *Concordance* by a robber who escaped to Paris, where he was arrested; the bishop's official had the first three under sequestration, but refused to hand them over to the proctor of the prior and monks of Ely, and they appealed in 1330 to Edward III to write to the bishop of Paris.

Mr. Atkinson doubts if there was an almonry school in the thirteenth century; but in the ordinances of the prior and convent in 1304 provision was made for more regular admission of scholars and the keeping of a record by the almoner, so that they should not stay longer than four years, and also for better food and drink to be supplied to them and their master. It was not the almoner, who was invariably a monk, but a benefactor, a workman named Clement, who was granted his board in the almonry and other privileges (p. 141). The *porta monachorum* is clearly stated to be *in elemosinaria* in Bishop Walpole's injunctions (p. 140, note 2).

It is possible to write with more precision than Mr. Atkinson has ventured to do about the parishioners' church in the nave and the tower of St. Peter, which he follows Archdeacon Chapman and others in identifying with the Steeple Gate on the High Street.¹ The two parishes in the city of Ely were described in 1310 as the *major ecclesia* and the *minor ecclesia* in one document, and in another as the *ecclesia S. Petri* and the *ecclesia S. Marie*.² The parishioners of the *ecclesia S. Petri*, or *ecclesia major* as it is called invariably in the contemporary sacrist rolls, had the right to use the nave of the cathedral church for their services which were conducted by secular chaplains, not by monks as stated on p. 8. The Steeple Gate then had over it a campanile or bell tower known as the *Turris S. Petri* because it was the belfry of the parishioners. The bells which called the monks to service hung in the central tower and were broken when it fell in 1322. Until Bishop Walpole issued his injunctions in 1300, the chaplains came in and out of the nave of the cathedral church by night when they were called to give extreme unction to dying parishioners and to administer the reserved sacrament which was kept in the pyx at the parish altar. Robbers had got in through their carelessness about the keys of the doors, and to avoid the recurrence of such incidents, the bishop ordered that the pyx and the chrismatory containing the sacred oils should be kept *in capella nova iuxta vetus campanile*. It is

¹ F. R. Chapman, *Sacrist Rolls of Ely*, i, 33; ii, 13, 165.

² MS. Add. 41612, ff. 34^v, 35.

not venturesome to identify this *capella nova* with a chapel over the charnel house (p. 25, sheet II); probably it was the building, not located by Mr. Atkinson, known as the *capella Philippi* with two shops adjacent to it, which is mentioned in the sacrist roll of 1291-2. It may be assumed that it was built fifty years sooner than Mr. Atkinson suggests on the evidence of a single wall 28 ft. high containing near the top two circular windows with quatrefoil cusping. Mr. Ladds has pointed out that the *Turris S. Petri super portam* which was struck by lightning in 1111 had a good claim to be known as the *vetus campanile*. Mr. Atkinson notes, from architectural evidence, that the Steeple Gate was rebuilt in the fourteenth century in the time of Alan of Walsingham. This suggests to me a possible interpretation of a payment on the sacrist roll of 1354-5 *In expensis factis circa prostracionem veteris campanilis 7s. 8d.*; was it the removal of the old belfry before rebuilding the Steeple Gate? The sacrist rolls which might have explained it are missing for the next two years.

There were further troubles at Ely because the times of services for the parishioners in the nave clashed with those of the monks in the choir. In 1310 Archbishop Reynolds's commissioners held an inquiry; there was grumbling in the monastery about the heavy cost of the visitation, but a monk noted that one good thing came out of it, the decree that the parishioners should be 'amoved' from the cathedral church as soon as a new church was built for them. However, the monks suffered them for fifty years longer, owing in the first place to acute financial difficulties, and then to the heavy cost of rebuilding after the fall of the central tower in 1322.

The plans of the Bishop's Palace are very welcome, though Mr. Atkinson's assumption (p. xxvi) that it succeeded to the Abbot's lodging on the site is improbable. The last abbot died in 1107, the bishopric was created in 1109 when the prior became the head of the monastery, and it is more likely that his house was the lodging of the Norman abbots.

There are a few slips in details, mainly outside Ely. The abbot's house at Wenlock should be prior's, Chicksands was a double Gilbertine house for nuns and canons, whereas Fordham was a house for canons only. Is the word *columbell*? (pp. 30 note, and 204) rightly translated as a dovecot? It occurs several times in the sacrist rolls as young birds brought in as tithes.

The book is printed in such good type that it is a pleasure to read it, and the illustrations and plans are beautifully reproduced. It is to be hoped that Mr. Atkinson will devote himself to the architectural history of the cathedral church of which he has only found space for a short description in this present volume.

R. GRAHAM.

The Roman Imperial Coinage. Edited by HAROLD MATTINGLY and EDWARD A. SYDENHAM. Vol. v, part II, by PERCY H. WEBB, M.B.E. 9 $\frac{3}{4}$ x 6 $\frac{1}{2}$. Pp. xxiv + 704. London: Spink. 1933. £2.

This stately volume, which completes Mr. Webb's contribution to Mattingly and Sydenham's great work on the Roman Imperial Coinage, amply fulfils all our expectations based on the author's reputation.

More than a quarter of a century ago he established himself as the recognized authority on the coinage of the British usurpers, and a further work on third-century mint-marks gave evidence of wide study and an intimate acquaintance with the whole field which forms the subject of the volume under review.

In part I of this volume Mr. Webb traced the course of the Roman coinage through the period of its greatest degradation under Gallienus and Claudius to the reformed system instituted by Aurelian and continued by his successors. In the first section of the present part II he continues the story from Probus to the middle of the reign of Diocletian whose further and more drastic reform inaugurates a new era. Such modifications as took place in the coinage between Aurelian and Diocletian are duly noted and commented on by Mr. Webb and, if not explained, may fairly be regarded as at present unexplainable. An interesting fact that emerges is that Carus and, in Britain, Carausius seem in their striking of gold to have anticipated the standard adopted by Constantine for his *solidus* and maintained unchanged by all succeeding Emperors.

Mr. Webb expressly disclaims that his work should be regarded as a corpus. Compression has to some extent been inevitable in order to keep the book within even its present generous limits. Still, there must be few known coins of the period which have not come under his notice, and with the co-operation of collectors who compare their coins with his lists he will soon have the material for a corpus in his hands. The present reviewer among some two hundred of his own coins of this period found only the following few slight variations from Mr. Webb's lists: Probus 352 *cos* for *cons*; 375 *Herculi Pacif. Obv. 3 F. PXXT*; 435 *Obv. 2 C. QXXT. Carus 70 T^I PXXI; 120 Obv. 1 C. F.*

The greater part of the book is devoted to the coinage of the 'Usurpers'. Full justice is done to the vigorous personalities and the vigorous coinage of Postumus and Carausius, who for a time maintained a glorious independence in Gaul and Britain respectively. In dealing with these and their less able successors Mr. Webb is peculiarly on his own ground. Every particle of evidence drawn from the confused and misleading narratives of late authorities, from the coins themselves, and the proportions in which they occur in hoards, is used by him to elucidate the problems of this obscure period. He must be right in dating the succession of Tetricus as late as 270. A recent report by Mr. Mattingly of a hoard found at Selsey in Sussex records among 966 coins two of Quintillus, who reigned for a short time in the autumn of 270, but none of Tetricus. A simultaneous report, also by Mr. Mattingly, of a hoard from Poole, very similar otherwise in numbers and content, gives 220 to the Tetrici and 10 to Quintillus. The evidence of the first hoard must be conclusive. The occurrence of a coin of Aurelian of his second Milan period in the second hoard shows that it is late enough to admit of the succession of Tetricus and the issue of a considerable coinage in his name between the deposition of the two hoards. The proportion of Quintillus's coins is perhaps no smaller than we should expect in the

case of an Emperor whose reign was short and whose coins had to find their way to Britain.

Carausius is, of course, the real 'hero' of Mr. Webb's book. To those who know and have used his earlier work it will seem unnecessary that the reviewer should say more than that this is essentially the same work brought up to date by the inclusion of all varieties—and they are many—since discovered. Others will be glad to be referred to the interesting discussion of Carausius's enlightened statesmanship shown in his coinage, which anticipated the most important feature of Diocletian's reform.

A question of some general interest is raised by a remark of Mr. Webb on p. 447. Coins inscribed with Carausius's *vota* bear the mint-mark RSR which on p. 434 is argued to be probably not later than 289. 'It is possible', Mr. Webb says, 'that the Emperor anticipated the fifth year of his reign, for which there is precedent.' This seems to mean that the dating would normally point to 292 when Carausius's first *quinquennium* would be completed. It seems much more likely that, unless *soluta* is added, the *vota*-coins of the second and third centuries refer always to the taking, not the fulfilment, of the vows. So the precedent of, e.g., Commodus's *votis XX* (his reign fell short of eighteen years) would after all be normal. In the latter part of the fourth century certainly such coins could be struck in any year from the taking up to the fulfilment of the vows, after which the number was changed, proceeding in the fourth century normally by fives, but in the second and third centuries by tens. The *votis X et XX* of Probus (who reigned six years) and the *vot X* on a *Victoria Aug* of Diocletian in a gold issue from Ticinum c. 288 are good examples, and they can hardly be called anticipatory except in the sense in which every vow or prayer must be anticipatory. The *Vota soluta X* of Probus (305) is so obviously a falsehood that it is impossible to accept it even on Tanini's authority without seeing it and assuring oneself that it is not a forgery. Dr. Pink's statement that all Diocletian's festivals were anticipated, his *quinquennalia* in 288, his *decennalia* in 293, his *vicennialia* in 303, means no more than that the celebration began at the beginning of the fifth etc. year. That the succeeding *vota*-coins could be struck before the full completion of the time seems unlikely. The *Quinquennales Aug* of Postumus (34-5, 50-1) and the *Vota qui Cae* of Carausius (1093) must refer to the *ludi* which would be the fulfilment of the vows and can be dated with more certainty. These appear to be the only instances of the number five being used in the references to these celebrations on the coinage of this or the preceding century.

It is rather surprising to find the MX of the above-mentioned coin of Carausius (1093) given in the index among unattributed mint-marks. It seems to be connected with the coins of Diocletian (78) and Maximianus Herc. (415) where *Saeculares Aug* (and *Augg* respectively. Is not the former a misprint?) on a 'broken column' (Cohen 'cippe') is completed by MX, explained, but only on its second occurrence, as = *multis XX*.

For a book of the size and complexity of this there seem to be very few misprints. *Summi* on p. 434, n. 2, is, however, certainly one. The

indexes are extremely good and contribute immensely to the usefulness of the book. Only when the reviewer was seeking information on 'over-strokes' and 'small change' did he feel that anything was lacking.

This book is the product of wide research, clear thinking, and well-balanced judgement. It should be heartily welcomed, not only by numismatists but by historians who wish to observe the last stages of the evolution of a *deus et dominus* from a *princeps*, and certainly by the field-archaeologist, half of whose coin-finds it will enable him to classify.

J. W. E. P.

An Introduction to the Archaeology of Wiltshire, from the Earliest Times to the Pagan Saxons. By M. E. CUNNINGTON. 8½ x 5½. Pp. 156. Devizes: Simpson. 1933. 3s.

This book has long been needed, and none other than Mrs. Cunnington could so fittingly have written it. The task, as in all such cases, was a difficult one. The material itself is, in Wiltshire, embarrassing in quantity and overwhelming in quality. It would indeed have been easy to produce a sort of annotated list of it—a select catalogue of the county's antiquities. But the readers who could profitably use such a catalogue unaided would be restricted in numbers; and Mrs. Cunnington, rightly desirous of a larger public, has accordingly essayed to supply the general information thereby required. Her little book thus falls into two parts. In the first part she deals with the geological and geographical setting, and outlines the main successive phases of culture which, from the earliest times until the Anglo-Saxon period, have left (or may be expected to have left) traces in her county. In the second part, she deals specifically with Wiltshire sites. In plan, therefore, the book is a primer of southern British archaeology as exemplified by a single prolific region.

A dual scheme of this kind is peculiarly prone to criticism, as the author would be the first to admit. The danger of falling between two stools is ever present, and, in the first part, the risks of a faulty or at least biased emphasis in so concise a summary are manifest. In the circumstances, a detailed review of the author's presentation is unnecessary. In the main it follows the conventional text-book surveys, sometimes a little inadequately tempered by more recent revisions in detail. In a considered view, for instance, it is doubtful whether under primitive conditions the chalk downs were in reality 'treeless or nearly so'; though at the same time the author usefully draws attention to the coarser herbage which at one time clad the present close-cropped downs. The old 'Abercromby' classification of beakers has lost its primary importance for a generation of archaeologists that has learned to distinguish three groups of 'invasions' of beaker-people as a more significant working basis—not least in Wiltshire. Again, the section dealing with the Anglo-Saxons ignores the very relevant work done by Mr. Thurlow Leeds since the War. These and similar omissions are, however, counterbalanced by a refreshing actuality where the author is working on first-hand experience, as in her excellent summary of 'the life of an Early Iron Age village', based upon her excavations at All Cannings Cross, Figsbury Rings, and elsewhere.

The second part, with its illustrated descriptions, constitutes a handbook of real utility which outweighs criticism in detail. Without emphasis, however, a few points call for comment. The discussion of the date of Stonehenge may be thought unduly lenient towards the Iron Age view, and there is certainly more evidence against than for regarding the Y and Z holes (which contained Iron Age pottery) as an original feature of the monument. Here Mr. Newall's marshalling of the evidence (*Antiquity*, 1929) still holds the field and deserved more than a passing reference in the bibliography. In the admirable account of Avebury, it might have been added that beaker pottery, as well as Peterborough pottery, was found by Mr. St. George Gray on the old ground-level under the great bank, which cannot therefore, on the conventional dating, be earlier than the nineteenth century B.C. Research farther afield would have modified the statement that the pottery from Woodhenge is 'not like any other known group of pottery'. There are in fact many points of resemblance with pottery of the passage-grave period in Denmark, and of similar or slightly later date in the Low Countries; whilst partial analogies have been noted on east-coast sites in this country, at Hartlepool and Clacton. It is probable therefore that Woodhenge is of the early rather than the middle Bronze Age, and that the beaker-sherds found on the site are appropriate to it. In that case, it equates conveniently with the timber and stone circles (the 'Sanctuary') which, with characteristic acumen, Mrs. Cunnington and her husband rediscovered and excavated on Overton Hill. These are well described, and the section on barrows, which follows, is an excellent synopsis of the subject. Indeed, the remainder of the book calls for nothing but praise save that, in a second edition, the slightly chaotic arrangement whereby Iron Age villages and British coins follow Wansdyke and Grim's Ditch might usefully be set right. The index also is capable of improvement; it mentions Silchester and the Yoldia Sea but omits Stonehenge—surely a case of the shoe-maker's children being worst shod! A last word on the book, however, must be one of appreciation for a manual which is a tribute alike to the archaeological wealth of the county and to the ability of its antiquaries, amongst whom the author herself holds a high place.

R. E. M. W.

The Roman Fort at Cadder. By JOHN CLARKE. $8\frac{1}{2} \times 6\frac{1}{2}$. Pp. xii + 93.
Glasgow : Jackson, Wylie. 1933. 12s. 6d.

Largely as the result of the valuable work of Sir George Macdonald, Mr. S. N. Miller, Mr. A. O. Curle, and Mr. John Clarke, the investigation of the forts of the Antonine Vallum has made much progress, and we can now visualize, with a reasonable degree of certainty, the historical 'setting' of the Clyde-Forth *limes*, initially established by Agricola during his third campaign in the north, A.D. 80 or 81. Owing to the high degree of scholarship, combined with careful observation in the field, displayed by its chief investigators, students of Roman Britain have always felt assured that their knowledge of the sequence of events associated with the Antonine Vallum and its antecedents was based upon a sure foundation. Happily, within recent years, a similar method of inquiry, *ab initio*, has

been applied to the perhaps more difficult problem of Hadrian's Wall, its vicinity and antecedents. Consequently, we already know something of the Agricolan (if not pre-Agricolan), late Domitianic and Trajanic phases which preceded the building of the Wall proper. This is all to the good, for the problems of the Vallum and the Wall are, in some degree, interrelated.

Although the exploration of the forts of the Antonine Vallum is as yet incomplete, many of them have been fully or partially excavated, and it is interesting to note that the majority had earthen (turf, clay, etc.) defences and that only two, Balmuildy and Castlecary, had fortifications of stone. This circumstance strikingly illustrates the trend of the middle second century to return to the earthen rampart as a means of defence—a trend which finds its counterpart in the Antonine rebuild at the Forden Gaer, in Wales. At a number of the sites excavated, some evidence, structural or in the form of 'detail-find', of earlier and short-lived Agricolan *praesidia* has been forthcoming—*praesidiis firmabatur* (*Tac. Agric. c. 23*).

The volume under review is an important contribution to our knowledge of the Vallum and its history; it is well documented and adequately illustrated, and is a worthy successor of Mr. S. N. Miller's *Balmuildy and Old Kilpatrick*. Mr. Clarke is to be congratulated on the results of a difficult excavation and upon the manner in which he has recorded them. The fort is a small one of 2·8 acres, within the ramparts, and such as was intended to accommodate a *cohors quingenaria*, or possibly a *cohors quingenaria equitata*. But the space for the latter unit would probably be unduly restricted, and Mr. Clarke holds that the possibility of the presence of cavalry at Cadder was slight. It contained the usual structures, viz. the head-quarters building, commandant's house, two granaries, barracks, and an internal bath-house, as at Balmuildy. Here too, as at Balmuildy, an external bath-house was constructed, at an uncertain date.

The author, in an able summary, considers the sequence of events under the following headings: (1) A large marching camp of about 20 acres. He inclines to the conclusion that it was Agricolan rather than Antonine. (2) An Agricolan fort. The evidence for a first-century occupation will be dealt with later. (3) An early Antonine occupation, for which there appears to be some evidence. (4) The Antonine fort. Of this there is, of course, abundant evidence. Definite indications of reconstruction, equating with three periods of occupation, were also discovered. Thus, the evidence from Cadder forms a close parallel to that revealed at Balmuildy, Old Kilpatrick, and Mumrills.

Now, as to the indications of an Agricolan occupation; I must frankly confess that, on the evidence at present available, I cannot regard this as a certainty. None of the structural details seems conclusive. For example, it is stated (p. 87) that 'the Head-quarters, which excavation revealed, is probably that of the second and third Antonine periods, the first-period building having been utterly demolished and the site levelled'. Pit 3, under the courtyard of the head-quarters, is cited as evidence of an Agricolan occupation; yet it yielded no Flavian relic, but furnished pottery of the Antonine period. Evidently it was filled in during or after an Antonine

occupation. Had it been filled in at the first Antonine construction we should have expected to find in it Flavian (if any) and not Antonine relics. This is on the assumption of a first-century phase. It is suggested that the pit might have been associated with the head-quarters of the first Antonine occupation. The 'time-incidence' of the silting and vegetation (found in it) is difficult to gauge. The question is further complicated by the possibility of some temporary abandonment of the *Limes*. Mr. Clarke thinks that the Antonine fort-builders utilized the ditch system of an Agricolan *praesidium*. But the ditches stopped short of the Vallum at both the NE. and NW. corners of the fort. It is of course possible, as suggested, that the Agricolan troops accepted the steep northern scarp of the terrain as a sufficient defence. It should, however, be pointed out that a similar termination of the ditch system immediately before it reached the Vallum occurs on many sites, and is a perfectly normal characteristic of the ditches of the Antonine forts of the Vallum, as Sir George Macdonald and others have shown. It is found at Balmuildy (*Proc. Soc. Ant. Scot.* lxvi, p. 228, fig. 3), Old Kilpatrick (*op. cit.* p. 234, fig. 5), Croy Hill (*op. cit.* pl. x), Mumrills (*Proc. Soc. Ant. Scot.* lxiii, plan), Rough Castle (*Proc. Soc. Ant. Scot.* lxvii, plan, p. 272), and Westerwood (*op. cit.* p. 279, fig. 13). Croy is given as an example where the northern ditch was omitted, in an Agricolan fort. But Sir G. Macdonald explains its apparent absence as due to the destructive influence of relatively modern buildings, and gives a complete outline of the early site (*Proc. Soc. Ant. Scot.* lxvi, fig. 13, pp. 263-4). The clavicular extensions of the S. and E. gate defences are held to be highly suggestive of an Agricolan earth-work. Whilst it is admitted that *claviculae* were constructed in the Flavian period, it is, on the other hand, submitted that they also formed a feature of second-century defence, even as late as the Antonine age. Thus, the *clavica* at Ardoch is almost certainly Antonine, and there are weighty reasons (which cannot be discussed here) for regarding the second earth-fort at Newstead, with its *claviculae*, as representative of the earliest Antonine occupation; as first suggested by Dragendorff (*J. R. S.* i, p. 136). Again, it is highly probable that the latest camp at Cawthorn, with its clavicular gate-defences, should be assigned to the early second century (cf. *Arch. Journ.* lxxxix, p. 76, fig. 20). Further, we are, I think, justified in concluding that the *clavica* of Hyginus (*c.* 55) was a feature of contemporary second-century earthen defence. Amongst the 'finds' the most conspicuous is the Tanicus inscription (*CIL.* vii, 1124), which Haverfield attributed to the Flavian period. After a carefully argued consideration Mr. Clarke concludes that an Agricolan date for this monument is doubtful.¹ Similarly, Dr. Buchanan's pottery-fragments cannot be accepted as definitely indicating a first-century occupation, for we know little, if anything, of the actual find-spots or circumstances of discovery.

¹ Here it may be noted that amongst the numerous inscribed stones found in Scotland, not one can be definitely assigned to the Flavian or the Trajanic periods—a considerable hiatus, if we are to assume that the Flavian occupation was prolonged down to the end of Trajan's principate, viz., $79/80 - 117 = 37$ years.

When we come to consider the finds of the excavation, carried out during the summers of 1929, 1930, and 1931, we must confess with Mr. Clarke that 'exceedingly little, if anything, survived which can with confidence be referred to the early period'. If we may judge by the fragments of decorated Samian illustrated, all appear to be quite typically Antonine, with two possible exceptions. Notwithstanding its glaze, I find difficulty in attributing no. 10, fig. 9, to the first century. In the first place, demarcation by bead-row is unusual on mid and late Flavian forms 30 and 37, and in the second, the animal depicted has not the attitude of the rabbit of the first-century, whose forelegs are outstretched almost in a line with the body, indicating flight *ventre à terre* (cf. the example cited as a parallel, Curle, *Newstead*, 215, 9). No. 15, fig. 9, appears to be a Hadrianic 'survival'; the irregularly placed tongue of the ovolو and the 'cog-wheel' medallion being reminiscent of the work of ACAUNISSA (cf. F. Oswald, *J. R. S.*, xix, pl. iv, 2). Amongst the coarse ware illustrated, only one piece, no. 1, fig. 16, can be said to possess definite first-century characteristics; but this type also occurs with early second-century associations at Margidunum and Verulamium. In view of the fact that an excavation of three seasons has revealed no 'find' of specific and exclusive Flavian date, one would be disposed to regard it as a 'survival' into the Antonine period. The 'firma-lampe', fig. 1, pl. ix, is almost certainly of second-century date, for the canal of the nozzle is open at both ends, as is usual during this period. Mr. Clarke alludes to the wholesale forgery of lamp stamps. An interesting example of this occurs at the pottery of Aquincum, datable in the second half of the second century, where a mould of a lamp of this type carries the 'forged' stamp of the first-century lamp-maker FORTIS (Kuzsinszky, *Das grosse Römische Töpferviertel in Aquincum bei Budapest*, fig. 279). As to an Agricolan phase, it is, however, possible that an ephemeral occupation of one or two seasons might leave little or nothing behind.

The reference to Brecon, p. 75, should read fig. 100, not 103.

Archaeologists will look forward, with keen interest, to further work by the author of this Report.

T. DAVIES PRYCE.

The Excavations at Dura-Europos conducted by Yale University and the French Academy of Inscriptions and Letters. Preliminary Report of Fourth Season of Work, October 1930–March 1931. Edited by P. V. C. BAUR, M. I. ROSTOVTEFF, and ALFRED R. BELLINGER. $10\frac{1}{4} \times 7\frac{1}{2}$. Pp. xvi + 290. New Haven: Yale University Press; London: Humphrey Milford. 1933. 17s.

This preliminary account of the fourth season's work at Dura-Europos follows the plan already laid down in the previous reports (reviewed in *Antiq. Journ.* xiii, 182). The description of the excavation occupies only some 40 pages, and the rest of the volume is devoted to detailed notes on selected finds, the inscriptions being most fully dealt with. The speed with which these reports are issued is a very real boon to students, who will recognize the editorial difficulties involved by the international staffing of the expedition. Many minor defects are probably due to the inevitable

lack of co-ordination between widely separated scholars, but in two cases it should not have been difficult to avoid criticism. The lack of a general plan of the site, which is promised in a future report, renders it difficult to follow the description of the excavations. The account of the buildings uncovered and their development is the most valuable part of a preliminary report, and could surely have been more detailed even if this involved the sacrifice of some other sections.

The most important site explored is the so-called 'Inner Redoubt' which is shown to have been a palace. The core of the building, a square block with reception halls and state chambers, 'constitutes a well-defended fortress dominating the town'. On architectural grounds this had already been ascribed to the period of the Macedonian origin of Dura. This conclusion is confirmed by the present report, but the absence of epigraphical proof is emphasized (p. 22). Another important discovery is the Roman triumphal arch erected in A.D. 115 or 116 and commemorating the occupation of Dura during the reign of Trajan. The transient character of this Roman advance is shown by a document of slightly later date when the city was again in Parthian hands (p. 283). Several houses uncovered in various areas add to our knowledge of the site in its later period.

Among the finds published are an important Sassanian fresco of the third century. Graffiti showing a ship and a camel caravan together with the inscriptions from the House of Nebuchelus illustrate the commercial activities of Dura in its latest phase. The representations of armoured horsemen add to our knowledge of Roman cavalry in the East at a period when monumental evidence is rare. These items, chosen among the very large number of discoveries recorded in the present volume, show how richly Dura has fulfilled its promise. That the end is not yet is shown by the concluding reference to the Christian remains discovered in the fifth season and already reported to the Congress of Christian Archaeology at Ravenna.

C. A. R. R.

A History of Darwin's Parish, Downe, Kent. By O. J. R. HOWARTH, Ph.D., and ELEANOR K. HOWARTH. With a foreword by Sir ARTHUR KEITH, F.R.S. $7\frac{1}{4} \times 4\frac{3}{4}$. Pp. viii + 88. Southampton : Russell & Co. 1933. 1s. 6d.

The attractive village of Downe has long been known to those who enjoy country walks: for one reason that there was no road through it leading anywhere particular; for another that there were many beautiful field paths. Of those who thus wandered in the neighbourhood some knew that Charles Darwin lived there, and perhaps more knew that on a neighbouring estate lived a distinguished President of this Society whose name was connected with Bank Holidays. When another distinguished Fellow of the Society, George Buckston Browne (afterwards knighted, to use the phrase beloved by genealogists), in 1927 nobly purchased Darwin's house to make it a national possession, this quiet Kentish parish suddenly became known all the world over as Darwin's parish, a Mecca for future pilgrims. Thus also it happened that Sir Arthur Keith and Dr. and Mrs. Howarth became parishioners, and Dr. and Mrs. Howarth have written this little

book stuffed full of valuable matter about the parish of Downe as well as about the Darwins and the Lubbocks. So far as the parish history was concerned they had little to help them. Downe falls in the first volume of Hasted, written before he got into his stride and under certain limitations which he found it better afterwards to abandon, to the great advantage of the subsequent volumes. He has little to say about Downe, finding in the village 'nothing worthy of being particularly mentioned'. How wrong he was this book shows, which once again proves how much there is of interest in connexion with any parish if you only take the trouble to seek it out. Due allowance, however, must always be made for the efforts of our earlier historians, for they had little of the published material which now is of so much assistance in tracing descents of manors and other property and in throwing light on the lives of the parishioners. The feet of fines do not help very much, though there is one of 40 Edw. III which establishes the ancient family of Petley in possession of property in Downe, and though the Petleys 'called cousins' with Master Philipott the herald, they were not induced in visitations or elsewhere to start a pedigree from before the Conquest.

It is impossible if this review is to be kept within bounds to allude to all the points of interest to be found in the pages of this book. It will suffice to call attention to one, and that is to the appearance of Jacob Verzellini therein. This renegade Venetian, who brought with him to this country the art of manufacturing Venetian glasses and got a monopoly therefor, seems to have amassed great wealth, which he invested in land in Downe and in the neighbourhood. Dying in 1606 he left a lengthy will full of points of interest, starting with directions about the brass to be laid in the chapel of Downe in his memory, which is fortunately still there. Its inscription in capitals unpunctuated is reproduced on page 63 of the book under review, in substance though not quite textually correct. The surname is Englished as Verzeline, and it has at times been so read on the brass. The last letter is however an *i* though so damaged by a pin that it may well be read as an *e*. Below the effigies of the father and mother are two groups usually described as six sons and three daughters. The daughters call for no comment, but as Verzellini had, so far as his will shows, only two sons, Dr. and Mrs. Howarth suggest that the others shown are three sons-in-law and a grandson. If this is so, it is an interesting variant from the common form in monumental brasses, but the arrangement here is certainly peculiar, and the third effigy from the right may well be John Nowell, doctor of physic, who married Jacob Verzellini's daughter Katherine, though the will shows that both John and Katherine were dead when the will was made in 1604. Further we find on page 64 an inscription on Edward Manning, one of the grand-children, which calls his mother Elizabeth, 'one of the coheirs of Jacob Verzellini', which, having regard to the will, cannot be exactly correct. It may be suggested that the testator's town house was not in Hart Street but in Marte Lane *alias* Mark Lane in the parish of St. Olave's, Hart Street, mentioned in his will. It is a compliment to the writers when a reviewer can only find small points such as these for comment.

There are few errors of the press: one has been noted on page 87 where Weaver appears instead of Weever.

No library of Kent books can now afford to be without this admirable history of Darwin's Parish *alias* Downe, Kent. RALPH GRIFFIN.

The Parish of Kirkby Malhamdale in the West Riding of Yorkshire. By JOHN WILLIAM MORKILL. $9\frac{3}{4} \times 7\frac{1}{4}$. Pp. xv + 346. Gloucester: Bellows. 1933. 25s.

The district which is the subject of this history is one of particular charm. Malham Cove and Gordale Scar are familiar names to many who are able to realize that the West Riding of Yorkshire is not merely an amalgamation of industrial towns. Indeed, a comparison of the population of this widely scattered parish with its eight townships at the time of the poll-tax returns of 1379, estimated at 527 (p. 41), with the total of 753 in 1911, or the resemblance of modern Calton, one of these townships, to the model Anglo-Saxon village community (p. 19), illustrates the slow advance of time and the comparatively unchanging conditions on the Craven hills. Lambert, the Parliamentary General, is the outstanding figure who links Calton with the history of England; but it is Walter Morrison, with his large heart and his princely generosity, who gives a special distinction to the parish, and whose character is the subject of a delightful memoir by Mr. Geoffrey Dawson (pp. 199-209).

The author of the book, who had great knowledge of the history and traditions of the district, spent many years in collecting material, much of it based on original research; and his second chapter, 'The Conquest and After', gives an excellent sketch of the history of the parish down to the present day, in which local knowledge and the power of describing past conditions are admirably combined. The history has several points of interest. There is little doubt that a church at Kirkby had been founded before 1086, although none is recorded in the Domesday survey. It was appropriated to the Premonstratensian abbey of West Dereham in Norfolk in or before the reign of John; and a detailed compotus, made by the vicar in 1454, is printed in a full translation (pp. 232-9). That house and those of Bolton, Fountains, and Furness shared between them, so Mr. Morkill estimates, at least two-thirds of the parish. Families of local importance include the Hartlings, Metcalfes, and Serjeantsons, and also the Mauleverers of Calton, about which much more might have been written. These, however, are of subordinate interest to the family of Lambert, which acquired most of the manors in the parish in the sixteenth century, and which forms the basis of Round's 'Tale of a Great Forgery' (*Ancestor*, vol. 3). Mr. Morkill agrees in condemning a series of charters which, with or without his connivance, provided an ancestry for John Lambert, the general's great-grandfather. The general's son is described on a tablet in the church of Kirkby Malhamdale as 'being the last heir male in whom that ancient family of y^e Lamberts in a line from William the Conqueror (and related to him by marriage) is now extinct'. The myth should now be regarded as extinct as the line. In the parish registers three civil marriages purport to be signed by Oliver Cromwell.

To this question Mr. Morkill has given reasoned consideration, with a verdict that it is impossible to regard the signatures as genuine. There is an interesting report of the jurors at Malham in 1259, quoted from the Fountains Chartulary, who measured the pasture and stated the numbers of animals which each bovine could sustain after proceedings had been instituted under a writ of admeasurement of pasture. Such reports at so early a date are not common. There are great differences between the Malham numbers and those in two other contemporary Yorkshire cases which are available—at Barningham in 1262, and Kirkby Hill in 1259–60.

It is greatly to be regretted that the author did not live to supervise the publication of the book, and to correct the proof-sheets. The task of editing another's work presents many difficulties; and it is often uncertain how far the author's manuscript may be regarded as being in its final form. In the present instance it is clear that the editor has underestimated the difficulties and has not given sufficient care to avoid an amazing series of misprints. These are specially noticeable in the important chapter on 'The Township under Feudal Conditions', and where Latin words are printed (e.g. pp. 67, 121). A charter printed on p. 124 gives Bucford where the original, illustrated in plate viii, shows Rucford; and Winelestorpe should be Wuelestorp [Wilstrop]. 'Guessum' (p. 156) is conjecturally 'gressum'; 'maereus' (p. 273) should be 'maerens'; 'pishion's' (p. 295) would look better as 'parishioners'; and 'Red Seal by illegible' (p. 129) reads unhappily. It is particularly unfortunate that the descriptions of three out of the six excellently reproduced charters are wrong; in one case a charter of Anger, abbot of Dereham, to Robert de Fegesere is given as a charter of John son of Adam de Plumbealand; and the photograph of the 'west' aisle of the church (p. 265) is that of the north. But perhaps an even less satisfactory feature of the book is the index. It is evidently the work of an unpractised hand; and indexing, like violin-playing, requires a series of rehearsals. It is not only gravely incomplete—apparently, for example, all the witnesses to the charters have been excluded, and there is one solitary reference to the abbey of West Dereham—but several entries, e.g. Gulph, Eagle Tribe, Inspeximus, and 'In Frankalmoign' (under the letter I) are merely useless.

These imperfections, it must be confessed, reduce considerably the permanent value of the book, which, handsomely produced as it is with its attractive illustrations, might have provided with greater care a worthy memorial of the author's knowledge and research.

C. C.

Periodical Literature

Antiquity, December 1933, contains:—The Neolithic Age in Northern China, by C. W. Bishop; Ostia in the light of recent discoveries, by G. Calza; Is prehistory practical? by V. G. Childe; Ancient glass, by D. B. Harden; Polychrome jewellery in Kent, by T. D. Kendrick; Iona, by O. G. S. Crawford; New technique; Dolmen-field in Trans-Jordan; Loam-terrains; Archaeology by moonlight; Excavations at Colchester; Catguoloph; Leadenhall and Roman London.

Journal of the Society for Army Historical Research, Autumn 1933, includes:—Some extracts from a military work of the eighteenth century; Swords of the British army, by C. ffoulkes and Capt. E. C. Hopkinson; The campaign of Agincourt, 1415.

The Journal of the Royal Society of Arts, January 5, 1934, includes:—Further excavations at Mohenjo-daro, by E. J. H. Mackay.

Journal of the British Archaeological Association, new ser., vol. 39, part 1, contains:—Report of the Congress at Nottingham, 1933; The pre-Fire towers of Sanctae Mariae de Arcubus, by W. A. Cater; The Roman villa at Magor Farm, near Camborne, Cornwall, by B. H. St. J. O'Neil; The carved capitals of Southwell minster, by Very Rev. W. J. Conybeare; Richard De Maners, abbot of Bindon, by Miss Rose Graham; Cholesbury camp, by D. Kimball.

The British Museum Quarterly, vol. 8, no. 2, includes:—Ceramic documents from Honan; Two Italic girdles; A new Kushan; A hieratic papyrus; An early British spoon.

The Burlington Magazine, January 1934, includes:—The façade of St. Gilles: a reconstruction, by R. Hamann.

The Connoisseur, December 1933, includes:—Ancient carved brackets, by F. Roe; Gold-engraving under glass, by W. B. Honey; Studies in English engraving, vi, by A. M. Hind; Early maidenhead spoons, by N. Gask; Portrait of a Somerset in armour, by J. G. Mann.

January 1934, includes:—Charles II couches, chairs, and stools, by R. W. Symonds; Bristol Venetian glass, by F. H. Brown; Zachariah Boreman, by Major W. H. Tapp; Pontefract church plate, by J. R. Fisher; An unrecorded Greenwich armour, by C. R. Beard.

The Year's Work in Classical Studies, 1933, includes:—Greek Art, by T. B. L. Webster; Greek archaeology and excavation, by H. G. G. Payne.

The Journal of Egyptian Archaeology, vol. 19, parts 3 and 4, contains:—Preliminary report of the excavations at Tell el-Amarna, 1932-3, by J. D. S. Pendlebury; The Beni Hasan coin-hoard, by J. G. Milne; Tanis and Pi-Ra'messe: a retraction, by A. H. Gardiner; Some pre-dynastic rock-drawings, by G. W. Murray and O. H. Myers; Studies in the Egyptian medical texts, ii, by W. R. Dawson; A petition to an Exegetes, A.D. 36, by A. E. R. Boak; The so-called Ramesses girdle, by T. E. Peet; The coffin of Prince Min-khaf, by W. S. Smith; The ram-headed god at Hermopolis, by G. A. Wainwright; The transcription of

late hieratic, by G. Bagnani; The so-called poem on the king's chariot, by W. R. Dawson and T. E. Peet; The signs  and , by A. J. Arkell; Bibliography, Christian Egypt, by De L. O'Leary; Bibliography, Greek inscriptions, 1931-2, by M. N. Tod.

Ancient Egypt, 1933, parts 1 and 2, contains:—Egyptian shipping, by Sir Flinders Petrie; Notes on some Indian and East Iranian pottery, by V. G. Childe; The Pharaoh's third title, by M. A. Murray; Egypt and the Caucasus, by V. I. Avdief; Rare scarabs, by Sir Flinders Petrie; China and Egypt, by M. A. Murray; A textile from the Hood collection of Egyptian antiquities, by Mrs. Crowfoot; Rhymes and rain charms, by M. A. Murray; The Unity of Man, by Mrs. Ellis.

The Geographical Journal, January 1934, includes:—The extinct waterways of the Fens, by Major Gordon Fowler.

Journal of the British Society of Master Glass-Painters, vol. 5, no. 2, includes:—Further notes on ancient glass in Norfolk and Suffolk, by Rev. C. Woodforde; Curiosities of glass-painting, by J. A. Knowles; A history of the York school of glass-painting, xi, by J. A. Knowles.

The Journal of Hellenic Studies, vol. 53, part 2, contains:—*Pulvis et umbra*, by H. L. Lorimer; Sarcophagi from Xanthos, by G. Rodenwaldt; The progress of Greek epigraphy, 1931-2, by M. N. Tod; Archaeology in Greece, 1932-3, by H. G. G. Payne; A portrait of Ptolemy III Euergetes, by R. P. Hinks; *Aeschylus, Prometheus Bound*, 370, by G. Thomson.

The English Historical Review, January 1934, contains:—Some Winchester College muniments, by H. Chitty and Prof. E. F. Jacob; Some new Spanish documents dealing with Drake, by A. K. Jameson; The Parliamentary army under the Earl of Essex, 1642-5, by Prof. G. Davies; 'Le Maitre, alias Mara', by Rev. J. M. Thompson; Rostagnus of Arles and the pallium, by P. Grierson; The constablership of Walter of Gloucester, by C. Johnson; The Winchester-Hyde chronicle, by N. Denholm-Young; The campaign of Verneuil, by M. A. Simpson; The 'Jersey' period of the negotiations leading to the Peace of Utrecht, by Prof. G. M. Trevelyan.

Bulletin of the Institute of Historical Research, November 1933, includes:—Tudor bibliography, by A. F. Pollard; Parliamentary printing, 1660-1837, by H. H. Bellot.

Transactions of the Royal Historical Society, 4th series, vol. 16, includes:—The Treaty of Seville, 1729, by Sir Richard Lodge; Bede as a classical and patristic scholar, by Prof. M. L. W. Laistner; Ranulf Flambard and early Anglo-Norman administration, by R. W. Southern; Woburn abbey and the dissolution of the monasteries, by Miss G. S. Thompson; The origin of the office of English 'resident' ambassador, by Miss B. Behrens; The economic and social effect of the usury laws in the eighteenth century, by Miss S. Campbell; The English factory at Lisbon, by Sir Richard Lodge.

The Library, new series, vol. 14, no. 3, contains:—John Wolfe, printer and publisher, 1579-1601, by H. K. Hoppe; Architectural design in English title-pages, by W. H. Smith; *Dives et Pauper*, by H. G. Pfander;

Thomas Heywood's play on 'The Troubles of Queen Elizabeth', by G. N. Giordano-Orsini; Newcome's Academy and its plays, by E. A. Jones; The bibliographical approach to Shakespeare: notes on new contributions, by A. W. Pollard; The scribal errors of MS. Cotton Nero A. x, by J. P. Oakden.

The Mariner's Mirror, vol. 20, no. 1, includes:—British battleships of 1870: The *Audacious*, by Admiral G. A. Ballard; Venetian naval architecture about 1550, by F. C. Lane; The presence of Tromp during Blake's reduction of the Scilly Isles in 1651, by C. D. Curtis; Some letters of Admiral the Hon. Samuel Barrington; *The Great Harry*, by G. Robinson; The story of the semaphore, by Commander H. P. Mead; Popham in the Tagus, 1650.

Miscellanea Genealogica et Heraldica, 5th ser., vol. 8, part 8, contains:—Ormonde and Kildare; Extracts from the parish register of Minterne Magna, Dorset; Some pedigrees and coats of arms from the Visitations of London; Grants and confirmation of arms, Society of Antiquaries MSS.; Funeral certificates: Katherm Morgan, 1628, and Mary Puleston, 1627; Some Herefordshire pedigrees; Booth pedigree and confirmation of arms; Clarenceux Benolt; Inscriptions, St. Mary's, Wimbledon.

The Numismatic Chronicle, 5th ser., vol. 13, part 3, contains:—The Terling treasure, by B. H. St. J. O'Neil and J. W. E. Pearce; 'Fel. Temp. Reparatio', by H. Mattingly; Claude Augustin de Saint Urbain, forger of Roman coins, by K. Pink; The Wroxall Theodosian hoard, by B. H. St. J. O'Neil; The Selsey hoard; Poole hoard of Roman coins; Vejovis and Divus Augustus; Elland Treasure Trove.

The Quarterly Statement of the Palestine Exploration Fund, January 1934, includes:—The British School of Archaeology in Jerusalem; Khirbet Fahil, by J. Richmond; Jacob's Bethel, by G. A. Wainwright; Bik'ah—'Valley' or 'Plain', by Rev. Prof. W. Emery Barnes.

The Journal of Roman Studies, vol. 23, part 2, contains:—Jerash in the first century A.D., by R. O. Fink; Notes on the building materials of Pompeii, by R. C. Carrington; A note on Suetonius, *Divus Julius* 56, 6, by C. H. Roberts; On Augustus and the Aerarium, by T. Frank; Commemorative arches and city gates in the Augustan age, by I. A. Richmond; The legions of Diocletian and Constantine, by H. M. D. Parker; Roman Britain in 1932, by Miss M. V. Taylor; *The Notitia Dignitatum* and the western mints, by F. S. Salisbury; A few notes on the currency of Britain, by J. G. Milne.

The Berkshire Archaeological Journal, vol. 37, no. 2, contains:—A vanished Berkshire family, by Lucy A. B. Harrison; Coats of arms in Berkshire churches, by P. S. Spokes; On the Berkshire dialect, by G. W. B. Huntingford; Brasses and mural monuments in Shinfield church, by Meta E. Williams; Wickham Bushes, a Roman settlement, by K. A. B. Roberts and L. Leese; Discovery of medieval walling in Broad Street, Reading, by W. A. Seaby.

Seventh Annual Report of the Friends of Canterbury Cathedral, includes:—The newly replaced glass in the Trinity chapel, by B. Rackham; Roof bosses in Canterbury cathedral, by C. J. P. Cave.

Transactions of the Essex Archaeological Society, new series, vol. 21, part 1, contains:—Wall-paintings in Essex churches, v, Copford church, by E. W. Tristram and Rev. G. M. Benton; Shallow Bowells and Torrells Hall, by the late J. H. Round; Camulodunum: excavations at Colchester, 1932, by C. Hawkes; Manuscripts from Essex monastic libraries, by M. R. James; Stubbers, North Ockendon, by Miss I. M. Russell; Some identifications of Essex place-names, by P. H. Reaney; Essex clergy in 1661, by Rev. H. Smith and Miss T. M. Hope; The De Theydon family, by Rev. A. L. Browne; Domestic wall-paintings recently discovered at Halstead, Felsted, and Great Waltham, by Rev. G. M. Benton; Visitations held in the archdeaconry of Essex in 1685, by Rev. W. J. Pressey; The Royal Arms in Essex churches, with special reference to a Tudor example at Waltham abbey, by Rev. G. M. Benton; Stone axe-hammer from Tendring, by Rev. G. M. Benton; The clove of a gilly-flower as a medieval rent, by Rev. Lt. C. W. Bullock; Was it at Terling that Hubert de Burgh took sanctuary in 1232? by Lord Rayleigh; Weeley church: abstracts from wills dating from 1510 to 1550, by Rev. G. M. Benton; The consecration of Hempstead church, by P. H. Reaney; Monumental brasses discovered at Chelmsford cathedral, by Rev. J. F. Williams; Discovery of underground sacristy at Great Coggeshall church, by Rev. G. M. Benton; Earthquake and inundations at St. Osyth, by P. H. Reaney; Irregular markets held at Fingringhoe, etc., temp. Henry VI, by Rev. G. M. Benton; John Gurdon, clerk, of Fingringhoe, temp. Henry VI, by Rev. G. M. Benton; Perambulations, by P. H. Reaney; Colchester lepers, by Mrs. Benton; Stanford-le-Hope chapel in 1282; Nicholas Baldewyn, 'steynour', of Colchester, by Rev. G. M. Benton.

The Essex Review, January 1934, includes:—Thomas Matthew of Colchester and Matthew's Bible of 1537, by W. T. Whitley; Essex wages in Cromwell's time; Little Baddow in the seventeenth century, by J. Berridge; Excavations at Witham in 1933, by H. J. Rowles; William Byrd and Stondon Massey, by E. S. Knights; The Rood screen, Clavering church, by May ffytche; St. John's abbey church at Colchester: a curious mistake in Hone's 'Every-Day book'.

Transactions of the Halifax Antiquarian Society, 1932, contains:—Some little local histories, by T. W. Hanson; Greave List of Sowerby for 1624, by H. P. Kendall; The Stepps in Warley, by H. P. Kendall; Some of our local people named 'Holroyde', by H. Wright; Northowram Hall, by W. B. Trigg; Prehistoric remains in Barkisland, by A. T. Longbotham; Old Ripponden: the Height and the Chappel, by J. H. Priestley; Our local railways, by C. Clegg; The Halifax coalfield: v, Soil Hill and Bradshaw mines, by W. B. Trigg; Local township records: Shelf, 1714–1841, by J. W. Houseman.

Proceedings of the Hampshire Field Club, vol. 12, includes:—On museums, by Sir Charles Close; Report of the first excavations of Oliver's Battery in 1930, by W. J. Andrew; The Winchester Anglo-Saxon bowl, and bowl-burial, by W. J. Andrew; The gravel and flint implements of Bleak Down, Isle of Wight, by H. F. Poole; The roof bosses in the nave aisles, Winchester cathedral, by C. J. P. Cave; A Hampshire plot, by

H. T. White; The two examples of sculptured alabaster panels now remaining in Hampshire churches, by A. R. Green; The ecclesiastical Court house of the hundred of East Meon, by P. Morley Horder; Tumuli in Netley Hill, Bursledon, by C. F. Fox; The Belgae through Hampshire? by J. P. Williams-Freeman; Excavations on Meon Hill, by Dorothy M. Liddell; Report of the second excavation at Oliver's Battery in 1931, by W. J. Andrew; Note on a Romano-British refuse pit at Swanwick, by Cyril Fox; The East Worldham baptismal bowl, by Rev. R. C. Bates; A medieval site in Soberton parish, by C. E. Stevens; Possible Early Iron Age site at Lainston.

Annals of Archaeology and Anthropology (University of Liverpool), vol. 20, contains:—Jericho: city and necropolis, by J. Garstang; Anatolian relations with the Aegean before 2400 B.C., by T. Burton Brown; The death of Lichas: Sophocles, *Trachiniae*, 781–2, by A. Y. Campbell; The British Museum excavations at Nineveh, 1931–2, by R. Campbell Thompson and M. E. L. Mallowan; Bleasdale and the idea of timber circles, by W. J. Varley.

Proceedings of the Society of Antiquaries of Newcastle-upon-Tyne, 4th ser., vol. 6, no. 4, includes:—Two decorated gold plates from a ring brooch of the Saxon period, by E. L. Guilford; The Ellsnook tumulus near Rock, by R. C. Bosanquet; Alnwick castle museum, by J. D. Cowen; Gateshead museum, by W. Young; A note on the Benedictine nunnery at Holystone, by K. G. Hall; Elizabeth Elstob, by J. Oxberry; Museum notes: a Coptic mortarium stamp and a rare brooch from Benwell; Busks as love tokens, by R. P. R. Lyle and R. C. Bosanquet; The Society's fifteenth-century fede-ring brooch, by T. Wake; A consecration cross at the Saxon church, Bradford-on-Avon, by W. A. Ingledew; The monumental inscriptions of St. Hilda's churchyard, South Shields, by H. T. Giles.

Transactions of the Shropshire Archaeological Society, vol. 47, part 1, includes:—An Inquisition in Salop, 1655, by virtue of a commission from the Protector, by Rev. H. E. Evans; Will of Thomas Pygot of Chetwynd, 1546; Lt.-Col. William Reinking in Shropshire, by Rev. J. E. Cruden; Deed relating to Hatton, etc.; The manor of Acton Burnell, by Rev. R. C. Purton; Deeds relating to an estate called Behind the Walls, Shrewsbury, by Rev. R. C. Purton; Palstave from Whixall Moss, stone implement reported from Buildwas, and gold standard weight from Uffington, by Miss Lily Chitty; Note on the water-supply of Uriconium, by R. W. Pocock; Mytton of Halston, by Evelyn H. Martin and Rev. J. E. Cruden; Members of Parliament for Shrewsbury; Local Peculiar Courts of Shropshire; The Abdon brief; A seventeenth-century explanation of the deficiencies in the Hereford Probate Registry; Letter from the bishop of St. Davids (1765) concerning the tithes of Kerry; Inquisition Post Mortem on the death of William Bottrell, 32 Eliz.

Surrey Archaeological Collections, vol. 41, contains: The Pilgrims' Way from Shere to Titsey, as traced by public records and remains, by E. Hart; Some account of the Surrey manors held by Merton College and Corpus Christi College, Oxford, in the seventeenth century, by Sir Henry

Lambert; The pigmy flint industries of Surrey, by W. Hooper; Dry Hill Camp, Lingfield, by S. E. Winbolt and I. D. Margary; Bronze-Iron Age and Roman finds at Ashtead, by A. W. G. Lowther; The Surrey Roll of the Tax of 1332, by Prof. J. F. Willard; The later periods of English domestic architecture, with a plea for practical work in the recording of Surrey examples, by A. W. Clapham, with a note by H. Jenkinson; Excavations on Limpsfield common; Roman find [coin of Magnentius] at Banstead; The Saxon cemetery at Guildown, Guildford; Ancient scratch dial at Little Bookham church; Ancient glass in Buckland church; The de la Puilles and the Poyles; Vincent Gavell of Cobham.

Sussex Notes and Queries, vol. 4, no. 8, includes:—New Bridge, Wisborough Green, by G. D. Johnston; Annals of old Rottingdean, by Lucy Baldwin and A. Ridsdale; The churchwardens' accounts of West Tarring, by Rev. W. J. Pressey; Horace Walpole in Sussex; Sussex lands held by English religious houses situated outside the county; Sussex church plans: West Dean and Litlington; Sussex entries in London parish registers, by W. H. Challen; Some eleventh-century references to Sussex, by Gordon Ward.

The Wiltshire Archaeological Magazine, December 1933, includes:—The Wiltshire Hundreds, by H. B. Walters; Notes on the records and accounts of the Overseers of the Poor of Chippenham, 1691–1805, by F. H. Hinton; William Gaby, his booke, 1656, ii, by E. Coward; Evidence of climate derived from snail shells, and its bearing on the date of Stonehenge, by Mrs. Cunnington; A subscription book of the deans of Sarum, 1662–1706, by Canon F. H. Manley; The Eightieth General meeting of the Wiltshire Archaeological Society held at Winchester, 1933; A terrier of the common fields belonging to Broad Town and Thornhill in the county of Wilts, 1725, by Canon E. H. Goddard; The Giant's Caves Long Barrow, Luckington, by A. D. Passmore; Skeleton found in a barrow at Idmiston; Skeleton found on Boscombe Down East; Ruined house at Chute; Camp Hill Reservoir, Salisbury, 1933; Sheila na Gig figure at Oaksey church; Saxon saucer brooch from Mildenhall; Chitterne All Saints, churchwardens' accounts; A second Stonehenge altar stone.

Transactions of the Woolhope Naturalists' Field Club, volume for 1930, 1931, and 1932, part 2, includes:—The field names of Burghill parish, by Lt.-Col. O. R. Swayne; Notes on the Pearle family of Dewsall, by the late Sir Joseph Bradney; A pottery site at Pembridge, by G. Marshall; Croft church, Herefordshire, by G. Marshall; John Gethin, bridge builder, of Kingsland, Herefordshire, 1757–1831, by G. H. Jack; Herefordshire in Drayton's 'Polyolbion', by J. Lodge; A Romano-British pottery in Herefordshire, by A. Watkins; Hereford place-names and sites, by A. Watkins; Archaeology: notes, by A. Watkins.

Proceedings of the Society of Antiquaries of Scotland, vol. 67, contains:—Excavation of a denuded cairn, containing fragments of steatite urns and cremated human remains, in Rousay, Orkney, by W. G. Grant; A collection of prehistoric relics, from Stevenston sands, Ayrshire, by

J. Graham Callander; Notice of a short cist at Fraga, Shetland, by Prof. T. H. Bryce; Trial excavations at the Old Keig Stone Circle, Aberdeenshire, by Prof. V. G. Childe; Note on three seventeenth-century Shetland tombstones, by Sir George Macdonald; Primitive agriculture in Scotland with particular reference to unrecorded Celtic lynchets at Torwoodlee, Galashiels, by H. E. Kilbride-Jones and M. E. Crichton Mitchell; Further excavation in 1932 of the prehistoric township at Jarlshof, Shetland, by A. O. Curle; Further notes on Huntley Castle, by W. D. Simpson; Short cists in Roxburgh and Sutherland, and rock sculpturings in a cave at Wemyss, Fife, by A. J. H. Edwards, with a report on the human remains contained in the cists, by Prof. A. Low; Two short cists at Upper Boyndlie, Tyrie, Aberdeenshire, by Prof. A. Low; Observations on hut circles near the eastern border of Perthshire, north of Blairgowrie, by W. Thorneycroft; The Scottish expedition in Norway in 1612, by Rev. J. Beveridge; A short cist containing a beaker at Newlands, Oyne, Aberdeenshire, by J. Graham Callander; Notes on the Roman pits at Rough Castle and Westerwood, by Sir George Macdonald; Notes on the Nether Bow post, Edinburgh, by H. F. Kerr; Two Bronze Age cists at Sprouston, Roxburghshire, by J. H. Craw, with a report on the skeletal remains, by Prof. A. Low; The Chi-Rho crosses on Raasay by J. J. Galbraith; The prehistoric antiquities of Benderloch and Appin, by Margaret E. Crichton Mitchell; Small implements of quartz from Ward Hill, Dunrossness, Shetland, by A. D. Lacaille; Notes on 'three bassoons' in the National Museum of Antiquities, by L. G. Langwill; Further burials at Blows, Deerness, Orkney, by W. G. Grant, with notes on the pottery found there and on the Bronze Age pottery of Orkney and Shetland, by J. Graham Callander; A third short cist at Rumgally, Fife, by J. T. Gordon, with notes on the skeletal remains, by Prof. D. Waterston; Excavations at Castlelaw fort, Midlothian, by Prof. V. G. Childe.

Miscellany of the Scottish History Society, vol. 5, contains:—Miscellaneous charters, 1315–1401, from transcripts in the collection of the late Sir William Fraser, by W. Angus; Bagimond's Roll for the archdeaconry of Teviotdale, from a thirteenth-century transcript in the Vatican archives, by Annie I. Cameron; Letters from John, earl of Lauderdale, and others to Sir J. Gilmour, President of the Session, by H. M. Paton; Letters to John Mackenzie of Delvine from the Rev. Alexander Munro, 1690 to 1698, by W. K. Dickson; Jacobite papers at Avignon, by Henrietta Tayler; Marchmont correspondence relating to the '45, by Hon. G. F. C. Hepburne Scott; Two fragments of autobiography by George Keith, 10th Earl Marischal of Scotland, by J. Y. T. Grieg.

Transactions of the Glasgow Archaeological Society, new series, vol. 8, part 3, contains:—The inquest of David: text, translation, and notes, by J. T. T. Brown; Scottish megalithic tombs and their affinities, by Prof. V. G. Childe; Recent discoveries, by L. MacL. Mann, viz.: Dug-out canoe found in Kilbirnie Loch, stone basin found at Inchinnan, Celtic bell from Stirling, cremated burial with Roman relics from Wigtownshire.

Transactions of the Hawick Archaeological Society, 1933, includes:—Moss paul and its associations, by J. Edgar; George Meikle Kemp and his

work, by J. Grieve ; An old Denholm book, by W. F. Cuthbertson ; A carved memorial stone from Wells House, in Wilton Lodge museum, Hawick, by A. W. Macgregor ; The passing of Sir Walter Scott : his last six and a half years, by C. B. Gunn ; A corner of the Ebro, by R. Aitken ; Armorial bearings of the county of Roxburgh, by J. H. Haining ; Sir Walter Scott and the Border reformers, by O. Hilson ; A register of monumental inscriptions in the original area of Yarrow churchyard, by Rev. R. S. Kirkpatrick.

Proceedings of the Royal Irish Academy, vol. 4, section C, nos. 4-9, contains :—Some unpublished Berkeley letters with some new Berkleiana, by A. A. Luce ; Inscribed stones recently discovered at Dowth tumulus, co. Meath, by H. G. Leask ; Tree planting in Ireland during four centuries, by A. C. Forbes ; The stones carved with human effigies on Boa island and on Lustymore island, in Lower Lough Erne, by Lady Dorothy Lowry-Corry ; Three medieval poems from Kilkenny, by St. J. D. Seymour ; Goethe, Giesecke, and Dublin, by G. Waterhouse.

Journal of the Royal Society of Antiquaries of Ireland, vol. 63, part 2, contains :—Rathmore church, co. Meath, by H. G. Leask ; Discovery of an ancient burial in a cairn near Ballyconnell, co. Cavan, by S. P. Ó Riordáin ; Killadreenan and Newcastle, by Rev. M. V. Ronan ; Janico Dartas, Richard II's Gascon squire : his career in Ireland, by Prof. E. Curtis ; The grant of Castleknock to Hugh Tyrel, by E. St. J. Brooks ; A recently discovered Bronze Age burial, Kilbarry, co. Cork, by Rev. P. Power ; The Byrnes' country in county Wicklow in the sixteenth century, by L. Price ; Bell of Bangor abbey ; The shrine of St. Patrick's hand ; The shrine of St. Fillan's hand ; Doorway in a stone fort at Carran, co. Clare ; Ring fort and souterrain at Ballykilmurry, co. Waterford ; controversy between the mayor of Dublin and the Chief Baron, 1381 ; An Iron Age pin from co. Donegal ; The prehistoric burial cairn on Tibradden mountain, co. Dublin ; A charter of John de Courcy.

Journal of the County Kildare Archaeological Society, vol. 11, no. 4, contains :—French veterans at Portarlington, by T. P. Le Fanu ; The parish of Ballon, co. Carlow, by E. O'Toole.

Transactions of the Anglesey Antiquarian Society, 1932, includes :—The Roman occupation of North Wales, by P. K. Baillie Reynolds ; Lligwy cromlech, by E. Neil Baynes ; The Danes in Anglesey, by E. W. Davies ; Anglesey court rolls, 1346, by G. P. Jones ; The stones of the castles, by E. Greenly ; Notes on Llanbabo church, Llanol, and Llanfechell church, by H. H. Hughes ; Notes on the Llanfaglan church, Llandwrog church, and Dinas Dinlle, by H. H. Hughes ; Kentish tracery and the nave windows in Beaumaris church, by G. G. Holme ; A list of Anglesey wills, 1691-9, by H. Owen ; Corporation of Beaumaris minute book, 1694-1723, by H. Owen ; Westminster School and its connexion with North Wales prior to the Victorian era, by A. I. Pryce ; Anglesey ship-building down to 1840, by D. Thomas ; Churchwardens' accounts of Llantysilio parish, 1749-54 ; Find of a 20-soldi piece of Victor Amadeo, of a silver medal of Charles Alexandre de Croy, and of a money-changer's weight.

The volume for 1933 includes:—Capel Cadwaladr, Bodlew, by the late H. O. Hughes; The excavation of a hut site at Parc Dinmor, Penmon, by C. W. Phillips; A stone axe-hammer of North American type, by E. N. Baynes; Military place-names in Wales, by H. Owen; Anglesey Court Rolls, 1346, by G. P. Jones; The armoured effigy in Beaumaris church, by G. G. Holme; Corporation of Beaumaris Minute Book, by H. Owen; The Parliamentary history of Beaumaris 1555-1832, by G. Roberts.

Société Jersiaise, Bulletin annuel, 1933, includes:—The Royal mace of the Bailiff of Jersey, by R. Mollet; Monsieur Josué Ahier, 1619-93, by P. Ahier; Documents from La Hague manor, by G. F. B. de Gruchy; Reparations and excavations in Gorey castle, 1931-3; Les Ecrehous: a report on the expedition of 1928 to the islet which is called the Maitre Ile, by N. V. L. Rybot; Bénitiers in Jersey, by G. S. Knocke; Dolmen de La Hougue Bie: nature and provenance of materials, by A. E. Mourant; A Celtic glass bead; La Blanche Pierre, Trinity.

The Journal of the Manx Museum, March 1933, includes:—Unpublished documents in the Manx museum; Early Steam Packets; An archbishop of Armagh (Hugh MacCawell) educated in Man.

June 1933 includes:—Unpublished documents in the Manx museum.

September 1933 includes:—Cinerary urn found at Ballaquayle, Douglas; Unpublished documents in the Manx museum; Rev. William Fitzsimmons, 1744-1819; The bicentenary of the 1733 Manx coinage.

December 1933 includes:—The worthiest men in the land during five centuries: a list of the members of the House of Keys from 1417; Unpublished documents in the Manx museum; Lost: a Peel bronze spear-head; Cashtal Yn Ard, Maughold, Isle of Man, by Prof. H. J. Fleure and G. J. H. Neely.

Bulletin of the Valletta Museum, vol. 1, no. 4, contains:—Bronze Age artistry in copper circlets from Maltese rock-tombs, by Sir T. Zammit; A decorative marble slab discovered lately at Notabill, Malta, by Sir T. Zammit; Old Valletta, by V. Bonello.

American Journal of Archaeology, vol. 37, no. 4, includes:—The work of the Oriental Institute in Iraq, by H. Frankfort; The latter part of the Agora campaign of 1933, by T. L. Shear; Qui terminum exarasset, by Louise A. Holland; Excavations in the Agora at Corinth, 1933, by O. Broneer; Note on the running drill, by Gisela M. A. Richter; New readings in the Archon lists, by S. Dow; Further remarks on the palace of Vouni, by E. Gjerstad and V. Müller; A new Greek inscription from Macedonia, by D. M. Robinson; Eighth-century B.C. inscriptions from Corinth, by Agnes N. Stillwall; News items from Athens, by Elizabeth P. Blegen.

Speculum, vol. 8, no. 4, contains:—The Irish origin of the Grail legend, by R. S. Loomis; Utility and philosophy in the Middle Ages, by R. McKeon; The heresy of the Judaizers and Ivan III, by G. Vernadsky; The English journey of the Laon canons, by J. S. P. Tatlock; Patristic studies and Middle English literature, by J. M. Campbell; King Arthur and the saints, by C. G. Loomis; *Orientis Partibus*, by H. C.

Greene; Twelfth-century land transfers at Aquinum, by H. H. Coulson; Cultural affiliations of early Ireland in the Penitentials, by T. P. Oakley; An Iconodulic legend, by J. Starr; An unpublished fragment of Wyclif's *Confessio*, by I. H. Stein; The manuscript tradition of the *Speculum Stultorum*, by A. Boutemy; The feast of Purim and the blood accusation, by C. Roth; The music of *The Kinges Note*, by G. L. Frost; *Turonisch* or *Turonizing?* by G. F. Davidson.

Old-Time New England, vol. 24, no. 3, includes:—Norwalk potteries, by A. L. and K. B. Winton; The Judge Hibbard house, Concord, Vermont, by Mabel Walter; View in Hanover street, Boston, about 1830, by W. K. Watkins; The saving of Sewall's bridge, by Helen B. Paterson and P. D. Orcutt.

Wiener Prähistorische Zeitschrift, vol. 20, part 2, includes:—The Hallstatt collection in the Prehistoric Institute of Vienna University, by O. Vohnicky; The neolithic finds from Dürrnberg, by M. Hell; Two finds from Unsterberg, by M. Hell; The Stillfried find, by F. Leonhard; A perforated axe from Stölzles, by R. Hauer; Isolated finds at Blumenthal, Vienna, and Gaiselberg, by L. Watzek.

Académie royale de Belgique: Bulletin de la classe des Lettres, 5^e sér., tome 19, parts 6–9, includes:—The conception of the Grail in the works of Wolfram d'Eschenbach, by M. Wilmette.

Académie royale de Belgique: Bulletin de la Commission royale d'Histoire, tome 97, part 2, contains:—Materials for the history of the House of Burgundy in Brabant and Limbourg, by H. Laurent and F. Quicke.

Tome 97, part 3, includes:—Three documents relating to the shooting meetings at Malines in 1458 and 1495, by J. Vannérus; Charles de Lalaing and the remonstrances of Emmanuel of Savoy, July and November 1556, by A. Louant.

Bulletin des Musées royaux, Parc du Cinquantenaire, Bruxelles, vol. 5, no. 5, includes:—Two Thebaid bas-reliefs, by Suzanne Berger; An iron sword from Luristan, by L. Spellers; A portable altar from Florence and the Echternach miniatures, by Suzanne Gevaert; Further note on a small Mosan retable, by M. Laurent.

Analecta Bollandiana, vol. 51, fasc. 3 and 4. P. Peeters edits from a manuscript in the convent of St. John at Patmos a Greek life of Pope Martin I, which adds no new facts, but throws valuable light on the circumstances of his persecution. Letters of the Byzantine hagiographer, Constantine Acropolites (fourteenth century), edited by H. Delehaye. Dom A. Wilmart edits from a twelfth-century manuscript in Canterbury Cathedral Library a fragment of an account of miracles wrought by the relics of St. Ouen (Audoenus) in the cathedral, which he ascribes to Eadmer. B. de Gaiffier reviews the controversy and the literature which it produced about the origin and burial place of the sixth-century Spanish hermit, St. Aemilianus (San Millan), originally supposed to be at San Millan de la Cogolla in Old Castille, but later claimed for Torrelapaja in Aragon. The latest authorities support the old belief. P. Grosjean shows that a supposed prophecy of St. Malachy about the duration of the English domination in Ireland rests on a forgery. The miracle of the Eucharist

at Brussels in 1370, by P. Lefèvre. Catalogue of the Latin hagiographical manuscripts in the chapter library at Benevento.

Revue Bénédictine, tome 45, no. 3, includes:—A fourth Latin manuscript of the apocryphal correspondence of St. Paul with the Corinthians, by D. De Bruyne; The Council of Antioch, 379, by G. Bardy; The admonition of Jonas to King Pepin, by A. Wilmart; The charters of St. Michael's in Mazzara, by L. White, jr.; Small works by Hugh of St. Victor, by A. Wilmart; Unpublished poems of Bernard the Cluniac, by A. Wilmart.

Annales de la Société archéologique de Namur, vol. 40, part 1, contains:—Military organization of Namur in the fourteenth century, by J. Balon; Indemnities for war damage in the district of Namur in 1432, by D. Brouwers; Prehistoric archaeology: new discoveries in the neighbourhood of Mesnil-St.-Blaise, by M. de Puydt.

Namurcum, vol. 9, contains:—Elizabeth of Namur, princess of Bavaria, and the origins of the University of Heidelberg, by J. Balon; The charter of the arquebusiers of Fosses in 1566, by D. Brouwers; A sixteenth-century alabaster figure of the Virgin in the museum, by F. Courtoy; Discoveries at Andenne, by F. Courtoy; Latin manuscripts in Namur: the Virgil of the Grand Séminaire, by P. Faider; The provostry of Hanzinnes in 1576, by L. E. Halkin; Neolithic lanceheads, by J. le Grand; The visits of Charles V to Namur, by F. Rousseau; Mosan coins of the eleventh and twelfth centuries found in Russia, by F. Rousseau.

Acta Archaeologica, vol. 4, parts 2–3. Bengt Thordeman describes in English the Asiatic splint-armour found on the warriors killed at the battle of Visby in 1361, reserving the term scale-armour for smaller perforated pieces of metal fastened on fabric or leather, but not represented on that site. The origin and development of spiral decoration is treated in German by Lars-Invar Ringbom, who shows how the most intricate pattern can be produced mechanically by means of slack threads between fixed points. Alfred Westholm writes in English on the relation of the Paphian temple of Aphrodite to oriental architecture, giving many plans for comparison. Under *Miscellanea* Birger Nerman has a note in German on the relations between Scandinavia and countries east of the Baltic in the Bronze and earliest Iron Ages; our Fellow Dr. Philip Nelson writes on a twelfth-century altar-bell in his collection; Gudmund Hatt reviews Bruno Schier's work on the early culture of eastern Middle Europe; and A. M. Tallgren has an essay on the home of the so-called Scythian animal-style, with a map of the best known finds in Asia.

Revue Archéologique, 6th ser., vol. 1, includes:—A bronze girdle clasp from Eretria in the National Museum, Athens, by E. Niki; Two unpublished Attic vases from the Castello Sforzeaco, Milan, by H. Philip-part; Two Roman sarcophagi illustrating the intellectual life, by H. Marrou; New Mithraic monuments from Serbia, by N. Vulic; Samson, by A. H. Krappe; The discoveries at Jericho.

L'Anthropologie, tome 43, nos. 5–6. In a well-illustrated article on the Capsian shell-mounds and other deposits of Africa Minor, M. Vaufrey minimizes the antiquity of the culture, and discusses its relation to the

Sebilian of the Nile. M. Peyrony's excavations at Laugerie-Haute have produced harpoon-heads and points with barbs and tang which he refers to phases v and vi of the Abbé Breuil's scheme for La Madeleine. There are reviews dealing with Quaternary sea-levels, terrace-gravels, loess, and glaciations, the editor giving his views on the Clacton industry (p. 565). The Mosbach sands, contemporary with the Mauer jaw, are said to have produced bones adapted to human use (p. 570), and several works on Algiers and Morocco are noticed. Gen. Smuts's paper on Climate and Man in Africa (*South African Journal of Science*, xxix, 98) has an interest of its own; and two publications by Dr. Mahr on Irish archaeology are reviewed. A summary is given of prehistoric finds in the Museum of Far-Eastern Antiquities at Stockholm, with a sequence of pottery types in early Japan (p. 594). An obituary notice of our Hon. Fellow Aimé Louis Rutor is contributed by the editor.

Revue Anthropologique, vol. 43, nos. 10-12. In connexion with grave-mounds near Salins in the Jura, M. Pirouet suggests that some of the Hallstatt people (Venetian Illyrians) joined the Ligurians who moved westward and burnt their dead at the end of the Bronze Age. Dr. Renaud comments on certain cultural resemblances in the prehistory of the Old and New Worlds, and infers a psychological unity of populations on both sides of the Atlantic.

Bulletin de la Société préhistorique française, tome 30, no. 9. The excavation of the barrow at le Bernet (St. Sauveur, Gironde) is described by M. Olov Janse, who illustrates three pottery vessels from the interior. A truncated pyramid of pottery with finger impressions is figured from an occupation site at Cartaillé (near Lachaux, Puy-de-Dôme). The rock-shelter known as le Goulet at Tremolat, Dordogne, has yielded a mesolithic series of flints, which are illustrated on three pages; and the Abbé Nouel describes some gravers found in contact with the detached slices at Beauregard (Nemours, Seine-et-Marne). A site at Fontenay-aux-Roses, Seine, has yielded a variety of relics, which are poorly reproduced; and chipped flint maceheads are described from Loire and Loiret: they are assigned to the middle Neolithic, later than Girolles.

No. 10. Commandant Octobon issues instructions to those co-operating with the committee on the Neolithic of France; and Dr. Bastin discusses some aspects of the Palaeolithic in the Aisne valley. There is a debate on figure-stones; and M. Chenet describes the prehistoric enclosure known as La Côte de Waly in the Meuse Dépt., with plans and one page of flints. The main article is by M. Peyrony who examines the Aurignac industries of the Vézère and comes to some startling conclusions. His thesis is displayed in tabular form on p. 559, and two sequences are distinguished, called respectively after Périgord and Aurignac, and coming between Le Moustier and proto-La Madeleine, the latter preceding lower Solutré. The 'point' of La Gravette is in his view (which is based on recent excavations at Laugerie Haute) a direct descendant of the Châtelperron form, to the exclusion of what is known as Middle Aurignac. Steep flaking seems to be characteristic of Neanderthal man and his Combe-Capelle contemporaries, while bone tools were evolved by Crô-Magnon

man of modern type ; and the two latter races were near neighbours in what is generally called the Aurignac period.

No. 11. The gallery of exotic Prehistory at the Trocadéro was opened in November last, and is described by Col. Vésignié. There is a page on recent excavations in Cyprus ; and the dolmen of Mélus en Ploubazlanec (Côtes-du-Nord) has been explored. M. Léon Coutil, Hon. F.S.A., draws attention to the hoard of gold lunulae from Bourbriac in the same department : the hoard weighed over 16 oz. and has been acquired by the museum of St. Germain. A list and map show the prehistoric sites of Latakia, and there is a preliminary note on the industry and fauna of the submerged peat on the Boulogne coast, which seems to be late Neolithic. Contiguous caves at Lourdes and their miscellaneous products are described by MM. Gadal and Octobon ; and the neolithic occupation of Caesar's Camp at St. Gemmes-sur-Loire (Maine-et-Loire) is described without illustrations. Enigmatic forms of flint implements are contributed by M. Nougier.

Bulletin Monumental, vol. 92, no. 4, contains :—The abbey of St. Mary, Aulps, by M. Dumolin and P. Abraham ; The calvary of Champmol and the art of Sluter, by H. David and Mlle Liebreich ; The church of Lyons-la-Forêt, by J. Gourdiat ; St. Peter, Souvigny, excavations and restoration, by F. Deshoulières ; Chapel of St. Sulpice at Saint-Marcel d'Ardèche, by A. Chauvel ; Base of a Limoges enamel candlestick, by M. C. Ross.

Bulletin de la Société française de reproductions de manuscrits à peintures, 16^e année, contains :—The principal illuminated manuscripts in the Mazarin library in Paris, by G. de La Batut ; Bibliography, 1929–32.

Hespérus, vol. 17, part 1, includes :—Volubilis regia Iubae, by J. Carcopino ; Marble head of a goddess found at Chella, by R. Thouvenot ; Hispano-mauresque and romanesque art, by E. Lambert ; The embassy of Jorge Juan to Morocco in 1767, by R. Ricard ; The potters of Mazagan, by J. Herber ; An Almohade fortress near Rabat, by R. Thouvenot ; Prehistoric objects from Dehira, by A. Ruhmann.

22 *Bericht der Römisch-Germanischen Kommission*, contains :—The state of prehistoric investigation in Rumania, by J. Nestor ; The state of our knowledge of the culture of the Viking age, by P. Paulsen.

Germania, vol. 18, part 1, contains :—The Jura culture, by K. Gumpert ; Gaulish chariot-burial in the district of Neuwied, by A. Günther ; Finds of Greek vases north of the Alps, by P. Jacobsthal ; A two-storeyed Roman burial chamber in the Severinstrasse in Cologne, by W. Haberey ; The Roman burial chamber in the Severinstrasse, by F. Fremersdorf ; A terra sigillata pottery at Colchester, by M. R. Hull ; An Alamannic seax with runes, by E. Moltke and G. Neckel ; A Germanic burial of the Migration period in Schwerin, by E. Sprockhoff ; New prehistoric rock paintings in Upper Italy, by P. Reinecke ; West Celtic forgeries of Philip of Macedon's gold staters, by B. Saria.

Mannus : Zeitschrift für Vorgeschichte, Band 25, Heft 4. The distribution of megalithic tombs in North Germany is discussed by Dr. Hansen, who adds maps of their occurrence also in Rügen and Ireland. The maps clearly show extensive losses during the last hundred years. Early numera-

tion in northern Europe and Asia is treated by Otto Reuter, and a prehistoric gaming die of pottery figured by Dr. Preidel. What is thought to have been a Stone Age intrenchment in the drift gravel of the upper Rhine is described by Gustav Bernhard, with map and section; and three views are given of a Levallois flake, considered the first palaeolith from the north Saxon Elbe.

Roemische Mitteilungen, vol. 48, parts 1 and 2. J. W. Crous describes and discusses two marble pillars covered with reliefs of weapons, now in the Uffizi, but which he traces to the church of S. Sabina, Rome, near the site of the 'armilustrium', to the symbolical decoration of which they may have belonged. The coins of Catana, by W. Schwabacher. R. M. Riefstahl describes the technical and decorative features of a carpet from Egypt in the Metropolitan Museum, New York, which belongs to the ancient tradition and may be as old as the sixth century. O. Brendel analyses the elements of a marble relief representing a Dionysiac sacrifice in the Boston Museum, and comes to the conclusion that it is a modern Roman forgery, based on the engraving of a vase in Antonini's *Vasi antichi* (1821). L. Curtius continues his discussion of Roman portrait heads, and identifies as Cleopatra the head of a statue (Roma) in the Sala di Croce Greca of the Vatican. This is followed by an exhaustive account of the portraits of M. Vipsanius Agrippa, which covers a wide field, and discusses the group of the Wolf and the Twins.

Notizie degli Scavi, 6th ser., vol. 8, fasc. 10-12. Ravenna, Two fragments correcting *C.I.L.*, xi, no. 132 and p. 1228, by R. Bartoccini. Carrara, Roman sculptures of local marble, including figures of Artemis, Sabazius (?), and a relief of Silvanus with dedication, by L. Banti. Pisa, Two finds of wine or oil jars outside the Lucca gate, by A. Neppi-Mòdona, who also describes an ancient anchor found in the works for the new canal. D. Diringer records minor Roman discoveries and objects from Etruscan tombs near Poppi showing that the Casentino in pre-Roman times was Etruscan and not Ligurian. Fiesole, Remains of an Etruscan temple with numerous archaic bronze votive figures and heads, male and female, in some cases attached to their stone pedestals, by P. Mingazzini. Orvieto, Archaic Latin inscription, apparently a name *Mamia*, by the same. Pitigliano, Bronze objects from a tomb, by E. Baldini. Bieda, Continuation of researches in the Etruscan necropolis: the most interesting object found was an archaic sphinx in stone, by A. Gargana and P. Romanelli. Pompei, Exploration of buildings connected with the Stabian Baths, by A. Maiuri. Pozzuoli, Remains of Roman houses, by P. Mingazzini. Lecce (Apulia), Various finds, especially of figured vases, by M. Bernardini. Sardinia, Votive objects from a Nuraghic sanctuary on the rock of Orgosolo near Nuoro, by A. Taramelli.

Vol. 9, fasc. 1-3. Chiusi, Investigation of an Etruscan vaulted chamber under the piazza between the episcopal palace and the cathedral, and of numerous subterranean passages there and elsewhere in the city, with inventories of the objects found, by D. Levi. Examination of prehistoric habitation of caves on the Montagna di Cetona (borders of Tuscany and Umbria), by U. Calzoni. The objects found range from stone implements

to decorated pottery and bronze weapons. Latin epitaphs (one Greek) from the neighbourhood of Mentana, by R. Paribeni.

Rivista di Archeologia Cristiana, vol. 10, nos. 1 and 2. E. Josi, New paintings from the Coemeterium Maius on the Via Nomentana. A. Monaci, Historical details in the legend of St. Eucherius about the Theban Legion. J. B. Frey, New epitaphs (mostly in Greek) from the Jewish catacomb of the Via Appia. An important article (in German) by A. Thomas on the identification of a late thirteenth-century mosaic icon of the Christ of Pity among the relics belonging to S. Croce at Rome with the picture which was the origin of the Mass of St. Gregory and the devotions and indulgences connected with it. A. C. Wand publishes the history and description of S. Antonio on the Esquiline by G. A. Bruzio (1610-92) from the manuscript in the Vatican Library, and adds some notes on the history of the church, which has recently been reopened for Russian Catholics. F. Gerke discusses and rejects the theory of the Swedish professor, I. Roosvall, that the sarcophagus of Junius Bassus belongs to the period 260-90, and not to the fourth century. J. B. Frey reviews S. Aurigemma's book (1932) on the Christian cemetery (fifth and sixth centuries) at Ain Zara in Tripoli. W. I. D. Visser shows that the fragment of a sarcophagus, formerly interpreted as Christ healing the leper (*Rivista*, vi, 1929, p. 35), really represents a poet attended by the Muse Thaleia.

Bulleti de la Societat Arqueologica Luliana, Sept.-Oct. 1933, includes:—Religious fraternities in Mallorca, 1478-84, by A. Sanxo; Documents referring to the Balearic Islands in the British Museum, by J. Liabré; Constitutions and ordinances of the kingdom of Mallorca, by A. Pons.

Fornvännen, 1933, häfte 5. In an article on Svintuna and its stone tower dating about 1125, Arthur Norden connects this fortification in Östergötland with a series intended to protect the Baltic coast of Sweden. Illustrations are plentiful and the German summary is given in the following number. Late medieval pewter flagons are described by Albert Löfgren, and various manufacturing centres are specified.

1933, häfte 6. In an appendix to Arthur Norden's article on Svintuna is figured a late Bronze Age sword from Resebro moor, which is taken to indicate an ancient route. The custom of burying the dead in swampy ground is discussed by Egil Lindsten in connexion with an oak-chest interment in Gotland (vol. for 1931, p. 284). Anthon Björn deals with an interesting animal's head in bronze from Gotland; and Holger Arbman publishes some goldsmiths' moulds of the Viking and later periods.

Anzeiger für Schweizerische Altertumskunde, Band 35, contains:—The excavations of the Pro Vindonissa society in 1932, by R. Laur-Belart and T. Eckinger; The designs and graphic work of Jost Ammann, 1539-91, by K. Pilz; The Winterthur glass-painter Hans Jeggli, by P. Boesch; Documents relating to the architectural history of the Zürich minsters, by L. Weisz; Schaffhausen goldsmiths of the fifteenth and sixteenth centuries, by M. Bendel; The plate of the Freiherr von Hohensax, by E. Rothenhäusler; Hans Ininger of Landshut, a

Zürich craftsman, by P. G. Kuhn; A tumulus of Hallstatt age at Seon in Canton Aargau, by R. Bosch; The Engelberg illustrated manuscript of the time of Abbot Frowin in its relation to Burgundian and Swabian illuminations, by R. Schilling; A landscape by Wolf Huber, by E. Poeschel; Zürich banners, by E. A. Gessler; The Iron Age settlement at Castaneda, by K. Keller-Tarnuzzer; The wall-paintings in the house 'Zum langen Keller' in Zürich, by K. Escher; The Romanesque frescoes at Meiringen, by R. Forrer; What is a 'Schappel'? by Frau J. Heierli; A drawing of a Swiss painting in the Dijon museum, by W. Cohn; A work of the Zürich 'Nelkenmeister', by I. Futterer; The historical museum at Olten, by E. Haefliger.

Praehistorica Asiae Orientalis, no. 1, contains the report of the first congress of the Prehistory of the Far East held at Hanoi in 1932 and includes the following papers:—Recent geology and Indo-Chinese prehistory, by J. Fromaget; The prehistory of Hong Kong and the New Territories, by C. M. Heanley and J. L. Shellshear; The chronology of the Jōmon culture of the Stone Age in Kantō, Central Japan, by Prince Oyama Kashiwa; Neolithic remains of South Manchuria and Eastern Mongolia, by Torii Ryūzō; The protoneolithic, by Madeleine Colani; Aspects of the Neolithic of Indo-China, by Madeleine Colani; Neolithic and protohistoric burials in Indo-China, by Madeleine Colani; Monolithic jars and funerary stones from Tran-ninh, by Madeleine Colani; Archaeological remains in the Philippines, by H. O. Beyer; The origin and distribution of metallic drums, by V. Goloubew.

Annales du Service des Antiquités de l'Égypte, vol. 33, part 1, contains:—The quarries of the Western Nubian desert, by R. Engelbach; Recent discoveries in the Saïte cemetery at Heliopolis, by H. Gauthier; Two documents dealing with the transport of cereals in Roman Egypt, by O. Guéraud; A statue of the herald Yamu-Nedjeh in the Egyptian museum, Cairo, by W. C. Hayes, jr.; Some Roman mummy tickets, by L. P. Kirwan; A statue of Heracles, by L. P. Kirwan; Geological specimens from the 'Chephren diorite' quarries, Western Desert, by O. H. Little; A Jewish titulus from Egypt, by L. A. Mayer and A. Reisenberg; A XIIth dynasty inscription near the Cairo-Suez road, by T. C. Townsend; Two fragments of inscriptions of Merimes, viceroy of Nubia, by A. Varille; The inscription on the back of the southern Colossus of Memnon, by A. Varille; The sign  and a new variant, by V. Vikentiev.

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- *Norman London : an essay. By Professor F. M. Stenton, M.A., F.B.A. With a translation of William Fitz Stephen's Description, by Professor H. E. Butler, M.A., and a map of London under Henry II by Marjorie B. Honeybourne, M.A., annotated by E. Jeffries Davis, M.A., F.S.A. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. 40. London : Bell, for the Historical Association, 1934. 2s. 6d.
- *Marriage Bonds of the ancient archdeaconry of Chester now preserved at Chester. Part i, 1700-1706-7. Edited by Wm. Asheton Tonge. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. vi + 302. Publications of the Record Society of Lancashire and Cheshire, vol. lxxxii, 1933.
- *The Great Red Book of Bristol. Edited by E. W. W. Veale, LL.D. Text (part 1). $10 \times 6\frac{1}{2}$. Pp. viii + 279. Bristol Record Society's publications, vol. iv. Bristol : 1933.

- *Wakefield in the seventeenth century. A social history of the town and neighbourhood from 1550-1710. By S. H. Waters. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. xv + 163. Wakefield : Sanderson and Clayton, 1933. 5s.
- *A descriptive list of the printed maps of Yorkshire and its Ridings, 1577-1900. Edited by Harold Whitaker. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. xiii + 261. Yorkshire Archaeological Society, Record Series, vol. lxxxvi. Leeds : Yorkshire Archaeological Society, 1933.
- *Court Rolls of the Manor of Hales, part iii. Containing additional Courts of the years 1276-1301 and Romsley Courts 1280-1303. Edited for the Worcester Historical Society by Rowland Alwyn Wilson, M.A., F.S.A. $11\frac{1}{2} \times 8\frac{1}{2}$. Pp. xxxiv + 218. London : printed for the Society by Mitchell, Hughes, and Clarke, 1933.
- *Flodden Papers. Diplomatic correspondence between the courts of France and Scotland, 1507-1517. Edited by Marguerite Wood. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. ciii + 158. Publications of the Scottish History Society, third series, vol. xx. Edinburgh : 1933.
- *Calendar of the Close Rolls preserved in the Public Record Office. Henry VI. Vol. i, A.D. 1422-1429. 10×7 . Pp. viii + 705. London : Stationery Office, Adastral House, Kingsway, 1933. £2 2s.
- *Calendar of the Close Rolls preserved in the Public Record Office. Henry VI. Vol. ii, A.D. 1429-1435. 10×7 . Pp. viii + 513. London : Stationery Office, Adastral House, Kingsway, 1933. 30s.
- *Calendar of entries in the Papal Registers relating to Great Britain and Ireland. Papal Letters, vol. xii, A.D. 1458-1471. Prepared by J. A. Twemlow. $10\frac{1}{2} \times 7$. Pp. xlv + 1089. London : Stationery Office, Adastral House, Kingsway, 1933. £2 5s.
- *Chertsey Abbey Cartularies. Volume i. $10 \times 6\frac{1}{2}$. Pp. xxxiv + 427. Surrey Record Society, vol. xii, 1933.
- *Feet of Fines Northumberland and Durham. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. xi + 133. Publications of the Newcastle-upon-Tyne Records Committee, vol. x, for the year 1931.

Indian Archaeology.

- *Prince of Wales Museum of Western India. Report for the year 1932-3. $8\frac{1}{2} \times 6$. Pp. ii + 29. Bombay : Government Press, 1933.

Manuscripts.

- *The Mount Sinai manuscript of the Bible. $9\frac{1}{2} \times 7\frac{1}{2}$. Pp. ii. London : The Trustees of the British Museum, 1934. 6d.
- *Studien über die Farbengabeung in der mittelalterlichen Buchmalerei. Von J. J. Tikkanen. Nach dem Manuscript des Verfassers herausgegeben von Tancred Borenius. $9\frac{1}{2} \times 6\frac{1}{2}$. Pp. viii + 452. Helsingfors : Societas Scientiarum Fennica, 1933.

Monuments.

- *Temple Church monuments, being a report to the Two Honourable Societies of the Temple. By Mrs. Arundell Esdaile. $10\frac{1}{2} \times 7\frac{1}{2}$. Pp. x + 198. London : 1933.

Near-Eastern Archaeology.

- *Tel Asmar, Khafaje and Khorsabad. Second preliminary report of the Iraq expedition. By Henri Frankfort. The Oriental Institute of the University of Chicago Communication, no. 16. $9\frac{1}{2} \times 7$. Pp. ix + 102. Chicago : University of Chicago Press, 1933.

Numismatics.

- *The Roman Imperial Coinage. Edited by Harold Mattingly and Edward A. Sydenham. Vol. v, part ii, by Percy H. Webb. $9\frac{1}{2} \times 6\frac{1}{2}$. Pp. xxiv + 704. London : Spink, 1933. £2.

- *Die Münzprägungen der Boier mit Berücksichtigung der vorboischen Prägungen.
Von Rudolf Paulsen. $12\frac{1}{2} \times 9\frac{1}{2}$. Pp. viii + 188, with a volume of plates.
Archäologisches Institut des Deutschen Reiches, Römisch-Germanische Kommission. Leipzig und Wien : Keller-Schroll, 1933.

Prehistoric Archaeology.

- *Fact and Fiction in Geology. By Thomas Sheppard. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. 73-92.
Reprint *Proc. Yorks. Geol. Soc.* xxii, part 2. Hull Museum Publications, no. 179.
Hull : The Museum, 1932.
- *Prehistoric Grave material from Carniola excavated in 1905-14 by H.H. the late
Duchess Paul Friedrich of Mecklenburg. Sold by order of her daughter.
Catalogue compiled under the direction of Dr. Adolf Mahr, with contributions
by Gero von Merhart, Raymond Lantier, Emil Vogt, Ferenc de Tompa,
Baldwin Saria, and J. M. de Navarro. $10\frac{1}{2} \times 7$. Pp. viii + 134, with 32 plates.
New York : American Art Association, 1934.
- *Bronzezeitliche und früheisenzeitliche Chronologie. Von Nils Åberg. Teil iii,
Kupfer- und frühbronzezeit. Teil iv, Griechenland. $12\frac{1}{2} \times 9\frac{1}{2}$. Pp. vi + 163 ;
vi + 283. Stockholm : Kungl. Vitterhets Historie och Antikvitets Akademien,
1933. 25 kr., 30 kr.
- *Zur Kenntnis der Anthropologie der prähistorischen Bevölkerung der Insel Cypern.
Von Carl M. Fürst. Lunds Universitets Årsskrift, N.F. Avd. 2, Bd. 29, Nr. 6.
 $10\frac{1}{2} \times 7\frac{1}{2}$. Pp. 106, with 48 plates. Lund : Ohlsons Buchdruckerei, 1933.
- *Öland under äldre Järnåldern. En bebyggelsehistorisk undersökning. Av Mårten
Stenberger. $12\frac{1}{2} \times 9\frac{1}{2}$. Pp. viii + 306. Stockholm : Kungl. Vitterhets Historie
och Antikvitets Akademien, 1933.
- *Oldtidens Kunst i Danmark. III, Jernalderens Kunst i Danmark, Førromersk og
Romersk tid. Ved Sophus Müller. $13\frac{1}{2} \times 10\frac{1}{2}$. Pp. viii + 133. Copenhagen :
Reitzels Forlag, 1933.

Religions.

- *Christian Myth and Ritual. By E. O. James. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. xv + 345. London :
Murray, 1933. 12s.
- *The Exodus of Israel : its date and historical setting. By David Davidson. $11\frac{1}{2} \times 8\frac{1}{2}$.
Pp. 32. Author, 47 Park Square, Leeds, 1933. 1s.
- *Über religiöse Signierung in der Antike mit besonderer Berücksichtigung der Kreuz-
signierung nebst einem Excurus über die Apokalypse und die Mithrasmonumente.
Inaugural-dissertation von Hadar Lilliebjörn. $9\frac{1}{2} \times 6\frac{1}{2}$. Pp. xii + 119. Uppsala :
Almqvist and Wiksell, 1933.

Roman Archaeology.

- *Un indice présumable de la présence de la huitième légion en Angleterre. Par Felix
Oswald. $11 \times 8\frac{1}{2}$. Pp. 269-71. Reprint *Homenagem a Martins Sarmenti*.
Guimares, Portugal : 1933.
- *Per una Bibliografia dell'Età Romana Imperiale. By Giovanni Sanna. $10\frac{1}{2} \times 8$.
Pp. 7. Reprint *La Nuova Italia*, n. 8-9, 1933. Florence : 'La Nuova Italia',
1933.
- *Recherches à Salone. Tome ii. Publié aux frais de la Fondation Rask-Ørsted.
 $15\frac{1}{2} \times 12$. Pp. 154. Copenhagen : Schultz, 1933.
See also Ceramics.

Runes.

- *Södermanlands Runinskrifter granskade och tockade. Av Erik Brate och Elias
Wessén. Tredje häftet. $12\frac{1}{2} \times 9\frac{1}{2}$. Plates 83-198. Stockholm : Kungl. Vitter-
hets Historie och Antikvitets Akademien, 1933. 15 kr.

Sculpture.

- *Victoria and Albert Museum. A picture-book of Gothic sculpture. $7\frac{1}{2} \times 5$. Pp. 24.
London : Stationery Office, 1933. 6d.

Proceedings of the Society of Antiquaries

Thursday, 9th November 1933. Sir Charles Peers, President, in the Chair.

The Rev. F. L. Long and Mr. L. T. Davies were admitted Fellows.

Sir James Berry, F.S.A., read a paper on a grotesque representation of Mithras on a capital in the crypt of St. Peter-in-the-East, Oxford.

Mr. E. J. Forsdyke, F.S.A., read a paper on a bronze statuette of Athena and some Greek jewellery in the Elgin collection.

Thursday, 16th November 1933. Sir Charles Peers, President, in the Chair

The Rev. S. J. A. Evans and Mr. H. Whitaker were admitted Fellows.

Mr. L. E. Tanner, F.S.A., and Mr. C. J. P. Cave, F.S.A., read a paper on a thirteenth-century choir of angels in the North Transept of Westminster Abbey.

Mr. C. J. P. Cave read a paper on roof bosses in Canterbury Cathedral.

Thursday, 23rd November 1933. Sir Charles Peers, President, in the Chair.

Mr. L. G. H. Lee was admitted a Fellow.

Dr. Tancred Borenus read a paper on excavations at Clarendon Palace.

Thursday, 30th November 1933. Sir Charles Peers, President, in the Chair.

Mr. L. E. Tanner, F.S.A., and Prof. W. Wright, F.S.A., read a paper on recent investigations regarding the fate of the Princes in the Tower.

Thursday, 7th December 1933. Sir Charles Peers, President, in the Chair.

Mr. M. E. L. Mallowan was admitted a Fellow.

Prof. J. Garstang, F.S.A., read a paper on the excavations at Jericho.

Thursday, 14th December 1933. Sir Charles Peers, President, in the Chair.

Mr. C. W. Phillips, F.S.A., read a paper on excavations at Pant y Saer, Anglesey.

Dr. Grahame Clark, F.S.A., read a paper on a Mesolithic settlement site at Selmeston, Sussex (p. 134).

Thursday, 11th January 1934. Sir Charles Peers, President, in the Chair.

Mr. G. D. Hornblower, F.S.A., exhibited an onyx cameo representing Orpheus and Eurydice from Upper Egypt (p. 190).

The following were elected Fellows:—Mr. Percy Kingsford Kipps, Mr. Bertram Wilson Pearce, Mr. Warwick Lindsay Scott, Mrs. Dina

Portway Dobson, Litt.D., Mr. Harold Cresswell Brentnall, Mr. Frederic Charles Larkin, Dr. Leon Ary Mayer, Mr. Charles Symonds Leaf, Major Gordon Fowler, Mr. Thomas Downing Kendrick, Sir Ambrose Heal, Hon. James Moncrieff Balfour.

Thursday, 18th January 1934. Sir Charles Peers, President, in the Chair.

The following were admitted Fellows:—Mr. H. C. Brentnall, Mr. T. D. Kendrick, and Sir Ambrose Heal.

Prof. J. L. Myres, F.S.A., and Mr. L. G. Wickham Legge read a paper on a picture commemorative of Gunpowder Plot at New College, Oxford.

The President read notes on some of the glass in New College chapel, Oxford.

Thursday, 25th January 1934. Sir Charles Peers, President, in the Chair.

Mr. B. W. Pearce and Mr. P. K. Kipps were admitted Fellows.

The following were appointed Auditors of the Society's accounts for the year 1933:—Mr. P. D. Griffiths, Mr. A. Gardner, Mr. C. T. Clay, and Mr. E. A. B. Barnard.

Dr. Haden Guest communicated a paper by the late Mr. Chester Jones, F.S.A., on the ecclesiastical architecture of Spain in Mexico during the Viceregal period.

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